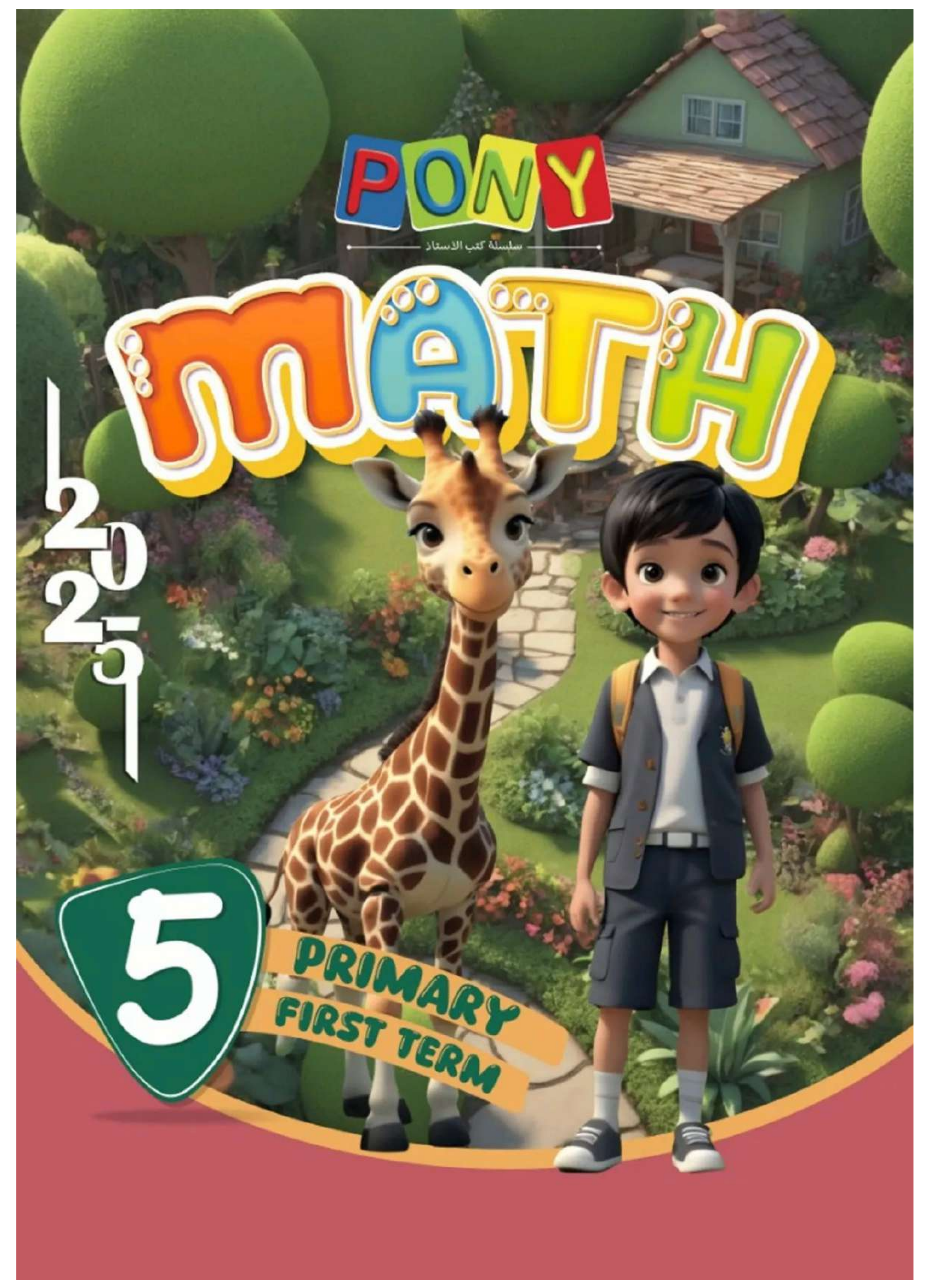

PONY
سلسلة كتب الأستاذ
MATH
5
PRIMARY
FIRST TERM

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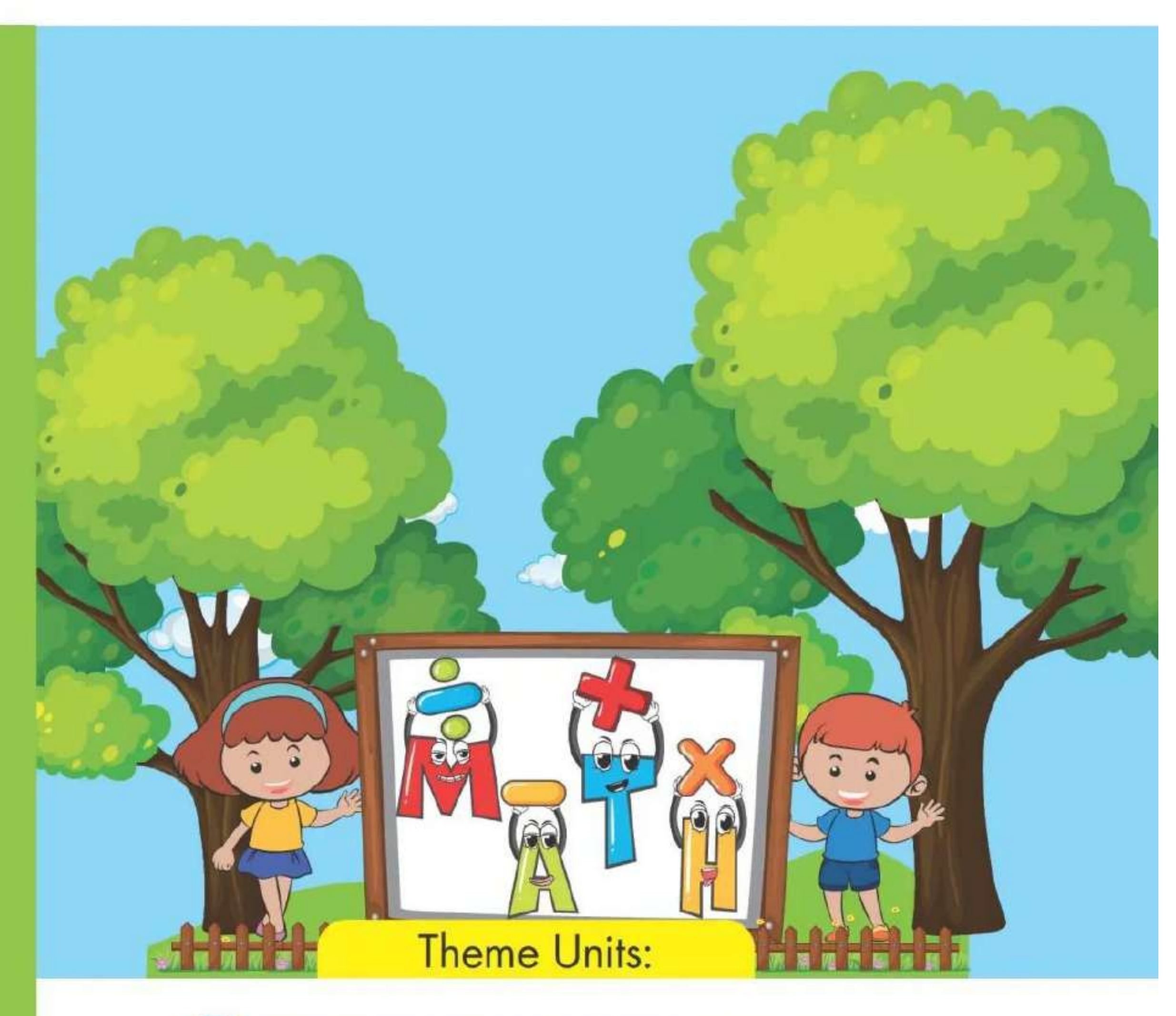
Theme 1
Number Sense and Operations

Theme 2

Mathematical Operations and Algebraic Thinking

Theme 1

Number Sense and Operations



Unit 1





Decimals to the Thousandths Place

Lesson 1 — Decimals to the Thousandths Place

Learning Objectives:

By the end of this lesson, the student will be able to:

- Read decimal numbers to the Thousandths place.
- Write decimal numbers to the Thousandths place.

Lessons 2&3 — Place Value Shuffle / Composing and Decomposing Decimals

Learning Objectives:

By the end of these lessons, the student will be able to:

- Explain how a digit changes value as it moves to the left or right in a decimal or whole number.
- Compose and decompose decimals in multiple ways.

Lesson 4 — Comparing Decimals

Learning Objective:

By the end of this lesson, the student will be able to:

- Compare decimals to the Thousandths place.

Lesson 5 — Rounding Decimals

Learning Objective:

By the end of this lesson, the student will be able to:

- Round numbers to the nearest Tenth, Hundredth, or Thousandth.





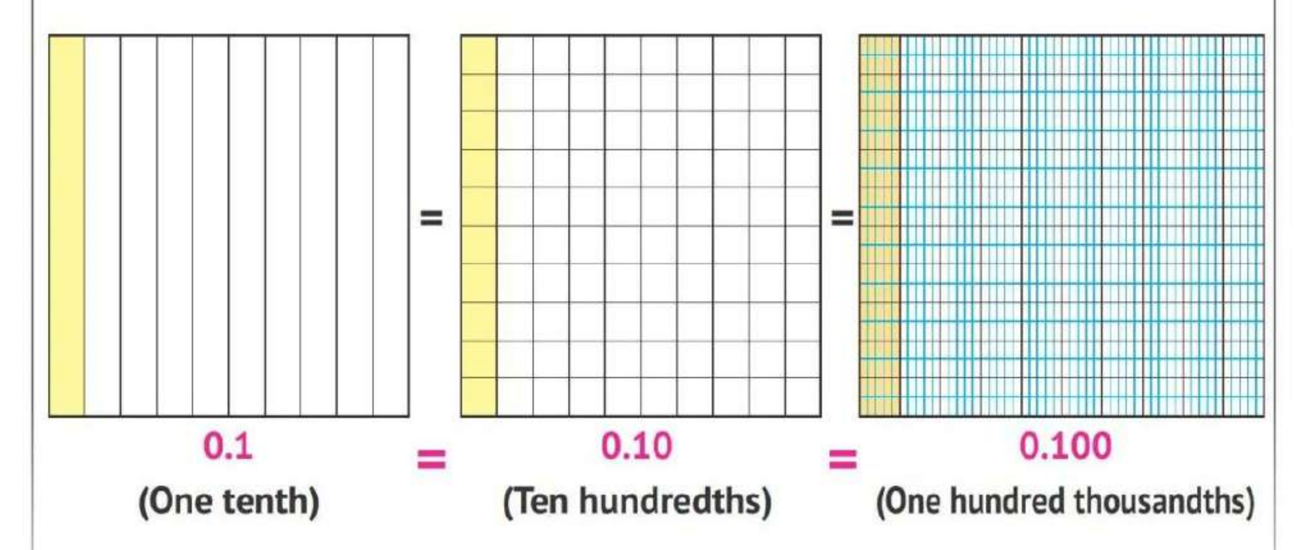
Decimals to the Thousandths Place

Remember

The whole one can be divided into

Ten equal parts	One hundred equal parts	One thousand equal parts
Each part is called one tenth.	Each part is called one hundredth.	Each part is called one thousandth.
$0.1 = \frac{1}{10}$	$0.01 = \frac{1}{100}$	$0.001 = \frac{1}{1,000}$

Note that: In decimals, zeros can be added to the right of the last non-zero digit without changing the value of the number.



0.1 (One tenth) = 0.10 (Ten hundredths) = 0.100 (One hundred thousandths)

Also: 0.2 = 0.20 = 0.200 , 0.3 = 0.30 = 0.300 ,... and so on.

Decimals

- A decimal is a number that consists of both a whole number and a fractional part.
- Decimal numbers lie between integers and represent numerical values for quantities that are whole plus some part of a whole.

Whole number part (integer)
To the **left** of the decimal point

Fractional part
To the **right** of the decimal point



It's read as: Three hundred fifty-seven **and** ninety-four hundredths.

Reading Numbers from One Milliard to Thousandths

Learn To read any decimal:

- Divide the whole number into numerical groups according to the place value table.
- Read the number from the **left**, each number group is followed by its name, separate the integer and the decimal with the word (and).
- Read the fractional parts followed by the name of the **last decimal part** on the **right**. (according to the number of decimal places)

Whole Number										Decimal Point	Decimals		
Milliards	Millions			Thousands			Ones						
Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones		Tenths	Hundredths	Thousandths
6	0	0	8	0	4	5	1	7	0	.	1	7	
6 milliard	8 million			45 thousand			170			17 hundredth			

The previous number (6,008,045,170.17) is read as:

Six milliard, eight million, forty-five thousand, one hundred seventy **and** seventeen hundredths.

Note the reading of the following numbers:

Number		Reading
0.6	is read as:	Six tenths
0.28	is read as:	Twenty-eight hundredths
0.027	is read as:	Twenty-seven thousandths
0.498	is read as:	Four hundred ninety-eight thousandths
5.7	is read as:	Five and seven tenths
3.24	is read as:	Three and twenty-four hundredths
58.39	is read as:	Fifty eight and thirty-nine hundredths
2,450.8	is read as:	Two thousand, four hundred fifty and eight tenths
5,027.006	is read as:	Five thousand, twenty-seven and six thousandths

1 **Write the following numbers in standard form:**

a) Two tenths: 0.2
b) Five hundredths: 0.05
c) Thirteen hundredths: 0.13
d) Four thousandths: 0.004
e) Eighty-five thousandths: 0.085
f) Seven hundred ninety-two thousandths: 0.792
g) Two and three tenths: 2.3
h) Forty-one and eight hundredths: 41.08
i) Thirty-two and seventy-four hundredths: 32.74
j) Fifty and sixteen thousandths: 50.016
k) Nine hundred sixty-one and two hundred five thousandths: 961.205

2 Write the following numbers in **word form:**

ⓐ 0.9: Nine tenths.

ⓑ 0.06: Six hundredths.

ⓒ 0.69: Sixty-nine hundredths.

ⓓ 0.045: Forty-five thousandths.

ⓔ 0.824: Eight hundreds twenty-four thousandths.

ⓕ 6.8: Six and eight tenths.

ⓖ 25.08: Twenty-five and eight hundredths.

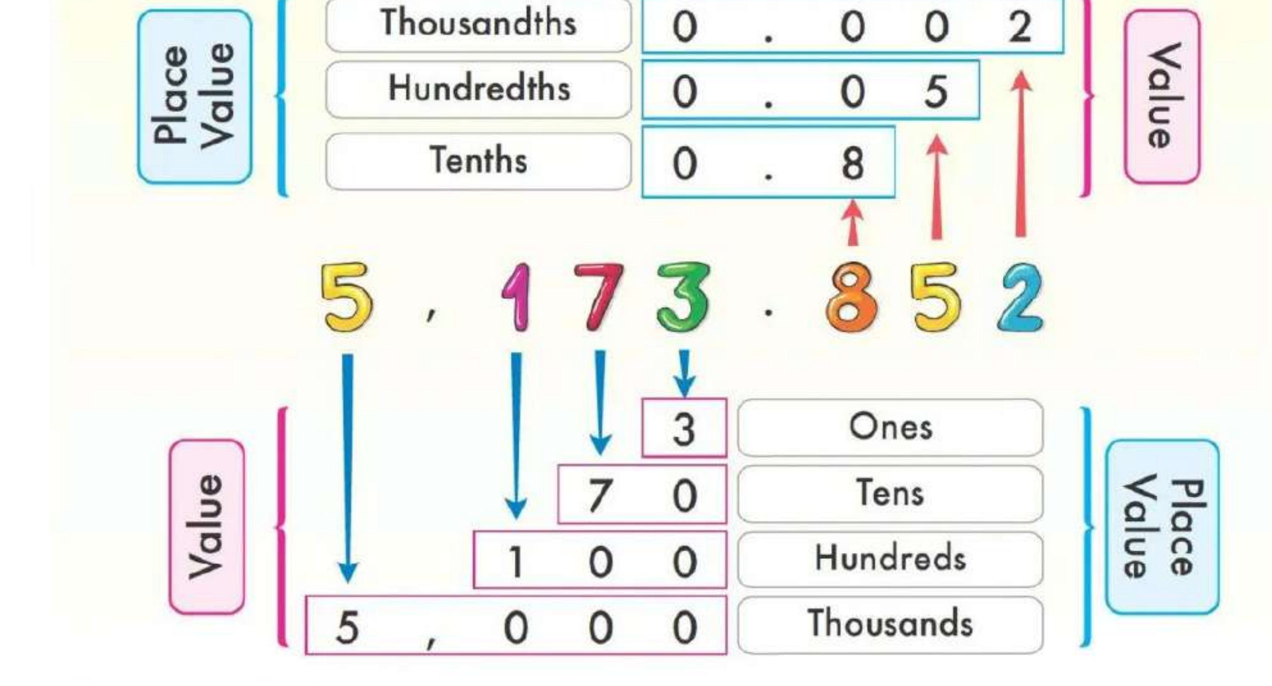
ⓗ 945.25: Nine hundred forty-five and twenty-five hundredths.

ⓘ 20.036: Twenty and thirty-six thousandths.

ⓙ 358.124: Three hundred fifty-eight and one hundred twenty-four thousandths.

The Value of Digits from One Milliard to One Thousandth

Learn



From the previous figure:

We notice that tha place value and the value for each digit are as follows:

Place Value	Digit	Value
Thousandths	2	0.002
Hundredths	5	0.05
Tenths	8	0.8
Ones	3	3
Tens	7	70
Hundreds	1	100
Thousands	5	5,000

3 **Complete the following:**

a. In 56,258.96, the digit 9 is in the .... Tenths .... place and its value is .... 0.9 ....

b. In 87,022.8, the digit 7 is in the .... Thousands .... place and its value is .... 7,000 ....

c. In 605.234, the digit 0 is in the .... Tens .... place and its value is .... 0 ....

d. In 2,845.127, the digit 5 is in the .... Ones .... place and its value is .... 5 ....

4 **Write the place value and the value of the encircled digit in the following numbers:**

	Number	Place Value	Value
a	452,207.5(6)	Hundredths	0.06
b	6,500,(7)39.7	Hundreds	700
c	9,009.00(9)	Thousandths	0.009
d	(3)7,000,157.128	Ten Millions	30,000,000
e	80,218.(0)39	Tenths	0



10

1 Choose the correct answer:

a) The value of the digit 3 in 12.358 is 0.3 . (30 or 0.3 or 3 or 0.003)

b) The place value of the digit 9 in 4.649 is Thousandths

(Thousandths or Tens or Tenths or Hundredths)

c) Seventy thousandths = 0.07 (0.7 or 0.70 or 0.007 or 0.07)

2 Complete the following:

a) 63.705 (in word form) is

Sixty-three and seven hundred five thousandths .

b) Twenty-four and forty-eight thousandths (in standard form) is

24.048 .

c) In 592.74, the digit 4 is in the hundredths place and its value is 0.04 .

3 Match:

a) Three thousandths	0.03	1
b) Three hundredths	0.3	2
c) Three hundreds	0.003	3
d) Three tenths	300	4

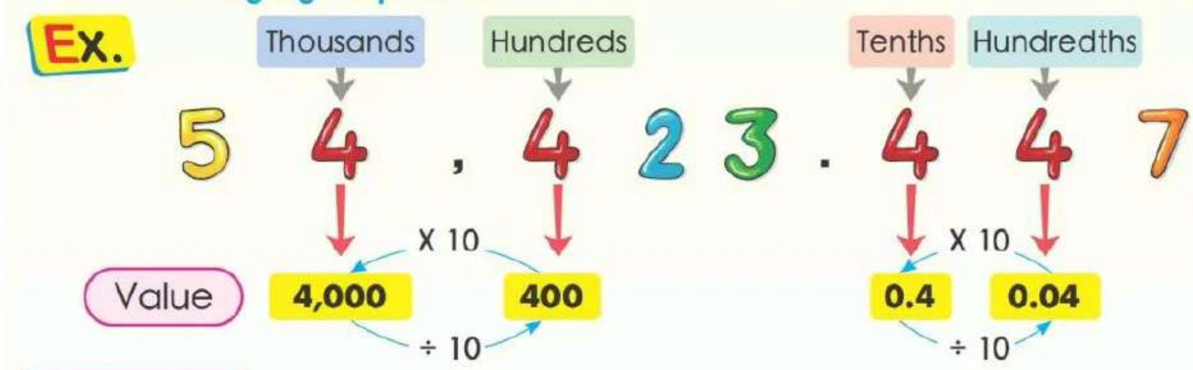
(Answers: a → 3, b → 1, c → 4, d → 2)



Place Value Shuffle
Composing and Decomposing Decimals

Learn The value of the digit changes within the number by changing its place.

Ex.



From above **The value of the digit:**

- Increases by 10 times **(X 10)** as it moves to the **left**.
- Decreases by 10 times **(÷10)** as it moves to the **right**.

Learn Using the place value charts to solve multiplying and dividing by 10 problems

Ex. Use the place value chart to solve the following problem:

75.4 x 10

Whole Number						Decimal Point	Decimals		
Thousands			Ones						
Hundreds	Tens	Ones	Hundreds	Tens	Ones		Tenths	Hundredths	Thousandths
				7	5	.	4		
			7	5	4				

- The value of 7 increased when multiplying by 10 from 70 to 700
- The value of 5 increased when multiplying by 10 from 5 to 50
- The value of 4 increased when multiplying by 10 from 0.4 to 4

75.4 754

Therefore:

The value of the whole number 75.4 increased when multiplying by 10 from 75.4 to 754. So, 75.4 X 10 = 754.

1 **Use the place value charts to solve the following problems.**

Fill in the blanks to show how the value of each digit has changed:

ⓐ 386 X 10

Whole Number						Decimal Point	Decimals		
Thousands			Ones						
Hundreds	Tens	Ones	Hundreds	Tens	Ones		Tenths	Hundredths	Thousandths
			3	8	6	.			
		3	8	6	0	.			

- The value of 6 (increased/decreased) when multiplying by **10** from 6 to 60 .
- The value of 8 (increased/decreased) when multiplying by **10** from 80 to 800.
- The value of 3 (increased/decreased) when multiplying by **10** from 300 to 3,000 .
- Therefore, the value of the whole number 386 (increased/decreased) when multiplying by **10** from 386 to 3,860 . So, **386 X 10 =** 3,860 .

ⓑ 2.5 X 10

Whole Number						Decimal Point	Decimals		
Thousands			Ones						
Hundreds	Tens	Ones	Hundreds	Tens	Ones		Tenths	Hundredths	Thousandths
					2	.	5		
				2	5	.			

- The value of 5 (increased/decreased) when multiplying by **10** from 0.5 to 5 .
- The value of 2 (increased/decreased) when multiplying by **10** from 2 to 20 .
- Therefore, the value of the whole number 2.5 (increased/decreased) when multiplying by **10** from 2.5 to 25 . So, **2.5 X 10 =** 25 .

Ex. **Use the place value chart to solve the following problem:**

75.4 ÷ 10 = 7.54

Whole Number						Decimal Point	Decimals		
Thousands			Ones						
Hundreds	Tens	Ones	Hundreds	Tens	Ones		Tenths	Hundredths	Thousandths
				7	5	.	4		
					7	.	5	4	

- The value of 7 decreased when dividing by 10 from 70 to 7
- The value of 5 decreased when dividing by 10 from 5 to 0.5
- The value of 4 decreased when dividing by 10 from 0.4 to 0.04

75.4 7.54

Therefore:

The value of the whole number 75.4 decreased by a factor of 10 from 75.4 to 7.54. So, 75.4 ÷ 10 = 7.54.

2 **Use the place value charts to solve the following problems. Fill in the blanks to show how the value of each digit has changed:**

ⓐ 915 ÷ 10

Whole Number						Decimal Point	Decimals		
Thousands			Ones						
Hundreds	Tens	Ones	Hundreds	Tens	Ones		Tenths	Hundredths	Thousandths
			9	1	5	.			
				9	1	.	5		

- The value of ...5... (increased/decreased) when dividing by **10** from ...5... to ...0.5... .
- The value of ...1... (increased/decreased) when dividing by **10** from ...10... to ...1... .
- The value of ...9... (increased/decreased) when dividing by **10** from ...900... to ...90... .
- Therefore, the value of the whole number ...915... (increased/decreased) when dividing by **10** from ...915... to ...91.5... . So, **915 ÷ 10 =** ...91.5... .

(b) 8.7 ÷ 10

Whole Number						Decimal Point	Decimals		
Thousands			Ones						
Hundreds	Tens	Ones	Hundreds	Tens	Ones		Tenths	Hundredths	Thousandths
					8	.	7		
					0	.	8	7	

- The value of ......7...... (increased/decreased) when dividing by **10** from ......0.7...... to ......0.07...... .
- The value of ......8...... (increased/decreased) when dividing by **10** from ......8...... to ......0.8...... .
- Therefore, the value of the whole number ...8.7... (increased/decreased) when dividing by **10** from ...8.7... to ...0.87... . So, **8.7 ÷ 10 =** ...0.87... .



- When multiplying by **10**,
  move all digits of the number one place to the **left**.
- When dividing by **10**,
  move all digits of the number one place to the **right**.

3 Find the result:

(a) 75.65 x 10 = ... 756.5 ....

(b) 83.19 ÷ 10 = ... 8.319 ....

(c) 3.587 X 10 = ... 35.87 ....

(d) 952.4 ÷ 10 = ... 95.24 ....

(e) 254 X 10 = ... 2,540 ....

(f) 360 ÷ 10 = ... 36 ....

Unit 1

Decomposing Decimal Numbers in Expanded Forms

Learn Extended form is used to decompose decimals.

Note the following:

ⓐ 0.025 = 0.02 + 0.005

ⓑ 0.25 = 0.2 + 0.05

ⓒ 4721.7 = 4,000 + 700 + 20 + 1 + 0.7

ⓓ 472.17 = 400 + 70 + 2 + 0.1 + 0.07

ⓔ 47.217 = 40 + 7 + 0.2 + 0.01 + 0.007



Decimals can be decomposed in several ways, as in the following example:

14.25 → 14 + 0.25 ; 14 + 0.2 + 0.05 ; 10 + 4 + 0.25 ; 10 + 4 + 0.2 + 0.05

4 **Decompose the following numbers:**

ⓐ 34.527 = 30 + 4 + 0.5 + 0.02 + 0.007 . (1st Way: Expanded form)
= 34 + 0.527 . (2nd Way)
= 30 + 4 + 0.527 . (3rd Way)

ⓑ 21.045 = 20 + 1 + 0.04 + 0.005 . (1st Way: Expanded form)
= 20 + 1 + 0.045 . (2nd Way)
= 21 + 0.045 . (3rd Way)

ⓒ 14.932 = 10 + 4 + 0.9 + 0.03 + 0.002 . (1st Way: Expanded form)
= 14 + 0.932 . (2nd Way)
= 14 + 0.9 + 0.03 + 0.002 . (3rd Way)

ⓓ 231.128 = 200 + 30 + 1 + 0.1 + 0.02 + 0.008 . (1st Way: Expanded form)
= 231 + 0.128 . (2nd Way)
= 231 + 0.1 + 0.02 + 0.008 . (3rd Way)

ⓔ 508.17 = 500 + 8 + 0.1 + 0.07 . (1st Way: Expanded form)
= 508 + 0.17 . (2nd Way)
= 508 + 0.1 + 0.07 . (3rd Way)

5 Compose the following numbers:

a) 200 + 30 + 0.5 + 0.007 = 230.507

b) 60 + 5 + 0.08 + 0.009 = 65.089

c) 24 + 0.075 = 24.075

d) 65 + 0.7 + 0.02 + 0.009 = 65.729

e) 125 + 0.87 = 125.87



10

1 Complete the following:

a) 36.17 X 10 = 361.7 (3.617 or 36.17 or 3617 or [361.7])

b) 624.8 ÷ 10 = 62.48 (624.8 or 6.248 or [62.48] or 6248)

c) 20 + 0.1 + 0.05 +0.006 = 20.156 (215.06 or [20. 156] or 21.56 or 215.06)

d) 0.007 + 8+0.2+500 = 508.207 ([508.207] or 7.825 or 502.807 or 507.28)

2 Decompose the following number:

a) 24.15 = 24 + 0.15 . (1st way :Expanded form)

= 20 + 4 + 0.15 . (2nd way)

= 24 + 0.1 + 0.05 . (3rd way)

b) 30.025 = Thirty and twenty-five thousandths. (In word form)

c) 40,590 = (4 X 10,000) + (5 X 100) + (9 X 10)

3 Match:

a) 31.49		3 + 0.1+0.04+0.009 1
b) 3.149		300 + 10 + 0.9 + 4 2
c) 314.9		0.09 + 0.4 + 1 + 30 3

(Answers: a → 3, b → 1, c → 2)



Comparing Decimals

Ex. Compere between 85.367 and 85.368, using the following steps:

Step 1	Step 2	Step 3	Step 4
Compare the whole numbers.	Compare the digits in the Tenths place.	Compare the digits in the Hundredths place.	Compare the digits in the Thousandths place.
85.367 ◯ 85.368	85.367 ◯ 85.368	85.367 ◯ 85.368	85.367 < 85.368
If they are equal →	If they are equal →	If they are equal →	

1 Compare using (<, = or >):

ⓐ 45.057 < 45.100 ⓑ 98.013 < 98.101

ⓒ 50.009 < 50.100 ⓓ 10.1 > 10.011

ⓔ 12.01 > 2.099 ⓕ 34.5 = 34.500

2 Select the greatest number:

ⓐ 1.401 , 1.341 , [1.440] , 1.041 ⓑ 1.055 , [1.3] , 1.28 , 1.045

3 Select the smallest number:

ⓐ 20.09 , 20.1 , [20.001] , 20.011 ⓑ 9.003 , [3.009] , 30.09 , 90.03

4 Circle the numbers greater than 35.8:

35.08 , (53.6) , (35.92) , 3.589 , 35.099

5 Circle the numbers less than 25.09:

25.5 , 52.09 , (25.009) , (2.509) , 29.05

6 Arrange the following numbers in an ascending order:

45.21 , 54.12 , 45.12 , 54.21 , 51.24

- 45.12 , 45.21 , 51.24 , 54.12 , 54.21

7 Arrange the following numbers in a descending order:

2.011 , 21.010 , 12.001 , 100.12 , 10.012

- 100.12 , 21.010 , 12.001 , 10.012 , 2.011



10

1 Complete the following:

a) 54.54 < 400.45 (> or = or [<])

b) 712.7 > 71.99 ([>] or = or <)

c) 11 > 0.999 ([>] or = or <)

2 Arrange in an ascending order:

257.12 , 251.72 , 725.12 , 257.21

- 251.72 , 257.12 , 257.21 , 725.12

3 Circle the numbers smaller than 2.05.

2.5 , (2.025) , (0.555) , 2.1 , 2.25 , 5.02 , (1.99) , (2.008)



Rounding Decimals

To the Nearest

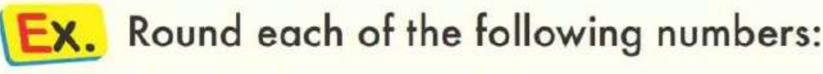
1 Whole Number	2 Tenth	3 Hundredth	4 Thousandth
Unit	One decimal place	Two decimal places	Three decimal places
Ones	0.1 – $\frac{1}{10}$	0.01 – $\frac{1}{100}$	0.001 – $\frac{1}{1,000}$

Learn

Rounding Strategies

First: **The Midpoint Strategy:**

25.0
Closer
24.7
24.5
Midpoint
farther
24.0



ⓐ 24.7 (To the nearest whole number)

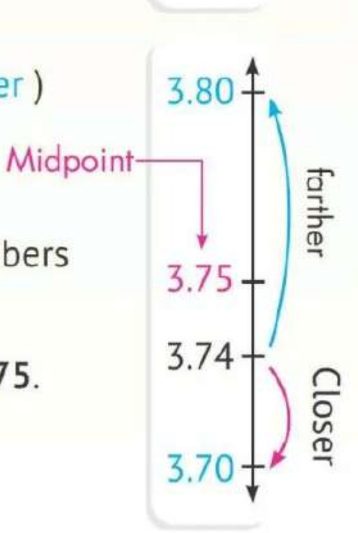
- The number **24.7** is located between the numbers **24.0** and **25.0**.
- The midpoint between the two numbers is **24.5**.
- **24.7** is closer to **25.0**.

So: 24.7 ≈ 25 (To the nearest whole number)

ⓑ 3.74 (To the nearest Tenth)

- The number **3.74** is located between the numbers **3.70** and **3.80**.
- The midpoint between the two numbers is **3.75**.
- **3.74** is closer to **3.70**.

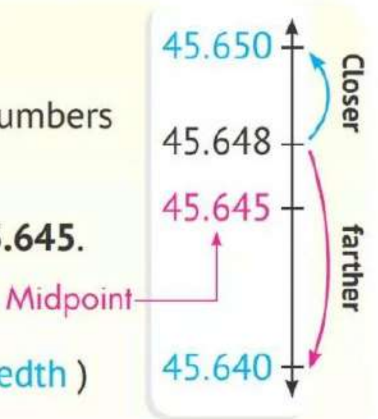
So: 3.74 ≈ 3.7 (To the nearest Tenth)



c **45.648** (To the nearest Hundredth)

- The number **45.648** is located between the numbers **45.640** and **45.650**.
- The midpoint between the two numbers is **45.645**.
- **45.648** is closer to **45.650**.

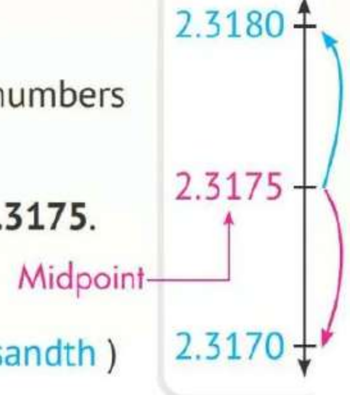
So: 45.648 ≈ 45.65 (To the nearest Hundredth)



d **2.3175** (To the nearest Thousandth)

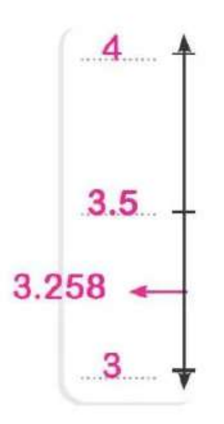
- The number **2.3175** is located between the numbers **2.3170** and **2.3180**.
- The midpoint between the two numbers is **2.3175**.
- **2.3175** is located at the midpoint.

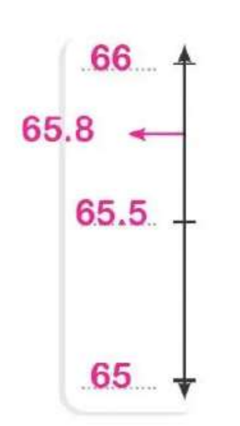
So: 2.3175 ≈ 2.318 (To the nearest Thousandth)

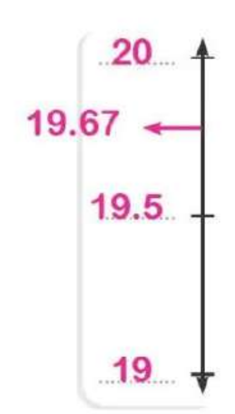


1 **Label the midpoint of the number line. Place the given decimal number at its proper location, and then round to the nearest whole number:**

a 3.258 ≈ 3 **b** 65.8 ≈ 66 **c** 19.67 ≈ 20



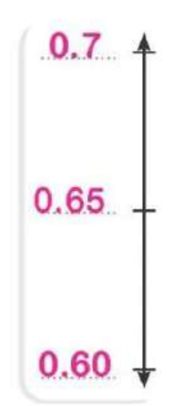


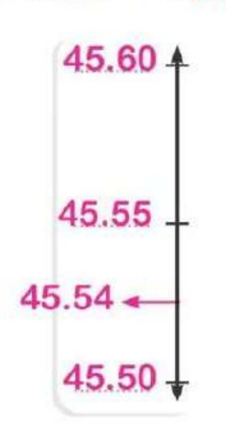


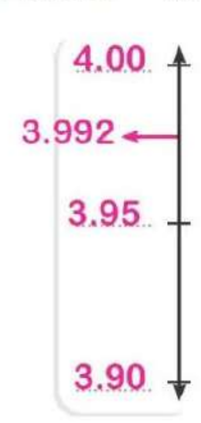
2 **Label the midpoint of the number line. Place the given decimal number at its proper location, and then round to the nearest Tenth:**



b 45.54 ≈ 45.5 c 3.992 ≈ 4

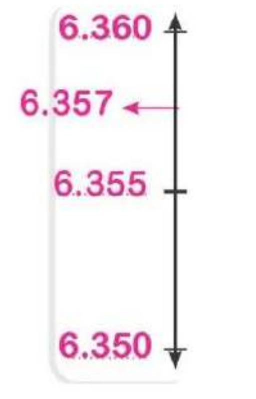


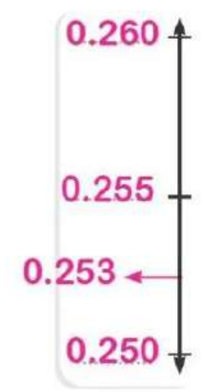


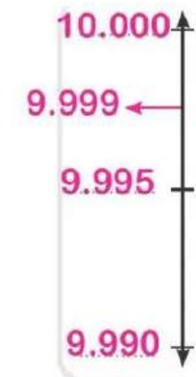


3 **Label the midpoint of the number line. Place the given decimal number at its proper location, and then round to the nearest Hundredth:**

a 6.357 ≈ 6.36 b 0.253 ≈ 0.25 c 9.999 ≈ 10









Second: Rounding Rule Strategy:

Ex. Round the following numbers:

a) 9.675 ≈ .... (To the nearest whole number)

b) 6.24 ≈ .... (To the nearest Tenth)

c) 56.839 ≈ .... (To the nearest Hundredth)

d) 2.3565 ≈ .... (To the nearest Thousandth)

Answer:

1. Select the digit in the place to be rounded.

a	b	c	d
(9) . 6 7 5	6 . (2) 4	5 6 . 8 (3) 9	2 . 3 5 (6) 5

2. Replace the digits in the places that precede the previously selected digit with **zeros**.

a	b	c	d
(9) . 6 7 5 → 0 0 0	6 . (2) 4 → 0	5 6 . 8 (3) 9 → 0	2 . 3 5 (6) 5 → 0

3. Look at the digit in the place preceding the place to be rounded directly.

If this digit is **0, 1, 2, 3**, or **4**, the number of the specified place remains **unchanged**.	If this digit is **5, 6, 7, 8** or **9**, we **add 1** to the number of the specified place.

Ex. Round the following numbers to the nearest:

a	b	c	d
9 . 6 (7) 5 (+1)	6 . (2) 4	5 6 . 8 (3) 9 (+1)	2 . 3 5 (6) 5 (+1)
10 . 0 0 0	6 . 2 0	5 6 . 8 4 0	2 . 3 5 7 0
9.675 ≈ 10	6.24 ≈ 6.2	56.839 ≈ 56.84	2.3565 ≈ 2.357
(Whole number)	**(Tenth)**	**(Hundredth)**	**(Thousandth)**

4 Round each of the following numbers:

ⓐ 753.5 ≈ 754 (To the nearest whole number)

ⓑ 56.25 ≈ 56.3 (To the nearest Tenth)

ⓒ 63.78 ≈ 60 (To the nearest Ten)

ⓓ 782.475 ≈ 782.48 (To the nearest Hundredth)

ⓔ 956.285 ≈ 1,000 (To the nearest Hundred)

ⓕ 0.0396 ≈ 0.04 (To the nearest Thousandth)

5 Fill in the chart as you round each decimal to the stated place value:

	Number	Round to the Nearest Whole Number	Round to the Nearest Tenth	Round to the Nearest Hundredth
ⓐ	56.284	56	56.3	56.28
ⓑ	572.089	572	572.1	572.09
ⓒ	0.896	1	0.9	0.90
ⓓ	50.101	50	50.1	50.10





10

1 Complete the following:

a) 23.567 ≈ **24** (To the nearest whole number)

b) 59.483 ≈ **59.5** (To the nearest Tenth)

c) 369.254 ≈ **369.25** (To the nearest Hundredth)

d) 0.475 ≈ **0** (To the nearest whole number)

e) 15.28 ≈ **20** (To the nearest Ten)

f) 0.089 ≈ **0.09** (To the nearest Hundredth)

2 Complete the following:

a) 3.159 ≈ 3.2 rounded to the nearest **Tenth** .

(Tenth or Hundredth or whole number or Ten)

b) 25.853 ≈ 30 rounded to the nearest **Ten** .

(Tenth or Hundredth or whole number or Ten)

c) 77.779 ≈ 77.78 rounded to the nearest **Hundredth**.

(Tenth or Hundredth or whole number or Ten)

d) 3.999 ≈ 0 rounded to the nearest **Ten** .

(Tenth or Hundredth or whole number or Ten)





Concept 1.2 Adding and Subtracting Decimals

Lessons 6&7

Estimating Decimal Sums
Modeling Decimal Addition

Learning Objectives:

By the end of these lessons, the student will be able to:

- Estimate sums of decimal numbers.
- Model decimal addition.
- Apply strategies to add decimals to the Thousandths place.

Lessons 8-11

Modeling Subtracting Decimals
Estimating Decimal Differences
Subtracting to the Thousandths Place
Decimal Story Problems

Learning Objectives:

By the end of these lessons, the student will be able to:

- Model decimal subtraction.
- Estimate differences of decimal numbers.
- Apply strategies to subtract decimals to the Thousandths place.
- Check the reasonableness of his/her answers.
- Add and subtract decimal numbers to the Thousandths place to solve story problems.





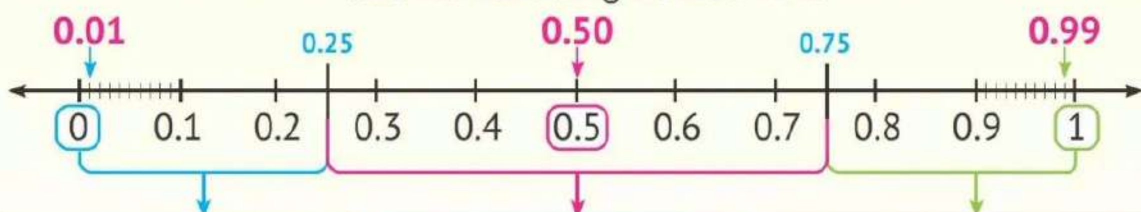
Estimating Decimal Sums
Modeling Decimal Addition

Learn — Estimating the Sum of Decimals

1 Benchmark Strategy:

The numbers (0, 0.5, and 1) are benchmark numbers.

Note the following number line:



There are decimals close to zero (0.1, 0.01, 0.001 ...)	There are decimals close to 0.5 (0.25, 0.622 0.51 ...)	There are decimals close to the whole one (0.75, 0.99, 0.999 ...)

Ex. Estimate the sum of the following using benchmark decimals:

ⓐ **0.65 + 0.456**

0.5 + 0.5 = 1

0.65 is close to 0.5

0.456 is close to 0.5

ⓑ **0.001 + 0.98**

0 + 1 = 1

0.001 is close to 0

0.98 is close to 1

ⓒ **0.55 + 0.9**

0.5 + 1 = 1.5

0.55 is close to 0.5

0.9 is close to 1

1 Estimate the sum of the following decimals using benchmark decimals:

ⓐ 0.89 + 0.533 → Estimate: 1 + 0.5 = 1.5

ⓑ 0.42 + 0.03 → Estimate: 0.5 + 0 = 0.5

ⓒ 0.612 + 0.021 → Estimate: 0.5 + 0 = 0.5

ⓓ 0.55 + 0.482 → Estimate: 0.5 + 0.5 = 1

Ex.

ⓐ

75.15 + 21.95
= 75 + 0.15 + 21 + 0.95
75 + 0 + 21 + 1
= 97
0.15 is close to 0
0.95 is close to 1

ⓑ

32.987 + 15.482
= 32 + 0.987 + 15 + 0.482
32 + 1 + 15 + 0.5
= 48.5
0.987 is close to 1
0.482 is close to 0.5



- We can separate whole and parts before using benchmark decimals.

2 Estimate the following sums (Using Benchmark Decimals):

ⓐ 5.95 + 21.002 = 5 + 0.95 + 21 + 0.002
→ 5 + 1 + 21 + 0 = 27

ⓑ 6.552 + 82.495 = 6 + 0.552 + 82 + 0.495
→ 6 + 0.5 + 82 + 0.5 = 89

ⓒ 12.954 + 3.45 = 12 + 0.954 + 3 + 0.45
→ 12 + 1 + 3 + 0.5 = 16.5

2 Rounding Strategy:

Ex. **Estimate the sum 23.845 + 58.538 using rounding strategy:**

23.845 + 58.538
- 23.85 + 58.54 = 82.39 (To the nearest Hundredths)
- 23.8 + 58.5 = 82.3 (To the nearest Tenths)
- 24 + 59 = 83 (To the nearest Ones)
- 20 + 60 = 80 (To the nearest Tens)

The actual sum: 23.845 + 58.538 = 82.383



- Rounding to the lowest place value is the closest estimate to the actual sum.

3 **Estimate the sum of the following decimals (Using Rounding Strategy):**

ⓐ 2.3 + 3.7 ⟶ Estimate: 2 + 4 = 6

ⓑ 3.451 + 8.091 ⟶ Estimate: 3.45 + 8.09 = 11.54

ⓒ 9.98 + 4.56 ⟶ Estimate: 10 + 4.6 = 14.6

ⓓ 4.9817 + 5.0192 ⟶ Estimate: 4.982 + 5.019 = 10.001

4 **Taha has 54.26 LE. His brother has 45.75 LE. They want to combine their money to purchase 4 kilograms of apples for 100 LE. Estimate to see if they have enough money.**

Estimate: 54 + 46 = 100

Yes, they have enough money.

Learn

Modeling Decimal Addition

First:

The Decimal Model

Represent each of the two decimals with different colors, their sum is the number of squares of both colors.

Second:

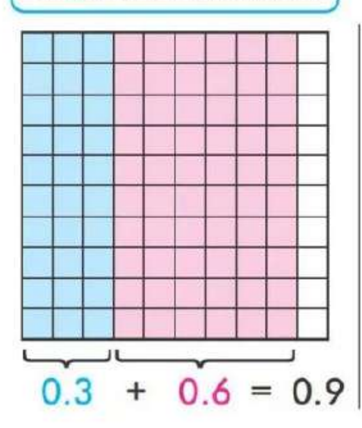
The Place Value Chart

Write the numbers in the place value chart and add.



ⓐ 0.3 + 0.6

Use the model



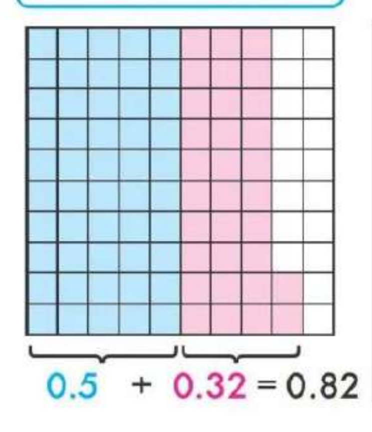
Use the place value chart

Whole Number			Decimal Point	Decimals	
Ones					
H	T	O		Tenths	Hundredths
		0	.	3	
		0	.	6	
		0	.	9	

$$\begin{array}{r} 0.3 \\ +\ 0.6 \\ \hline 0.9 \end{array}$$

ⓑ 0.5 + 0.32

Use the model



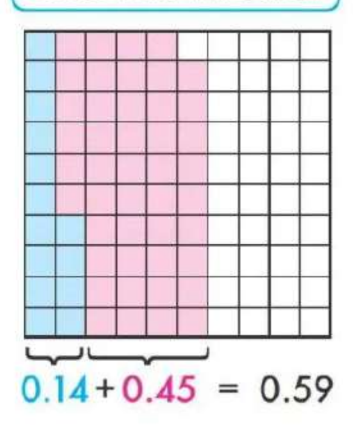
Use the place value chart

Whole Number			Decimal Point	Decimals	
Ones					
H	T	O		Tenths	Hundredths
		0	.	5	
		0	.	3	2
		0	.	8	2

$$\begin{array}{r} 0.5 \\ +\ 0.32 \\ \hline 0.82 \end{array}$$

ⓒ 0.45 + 0.14

Use the model



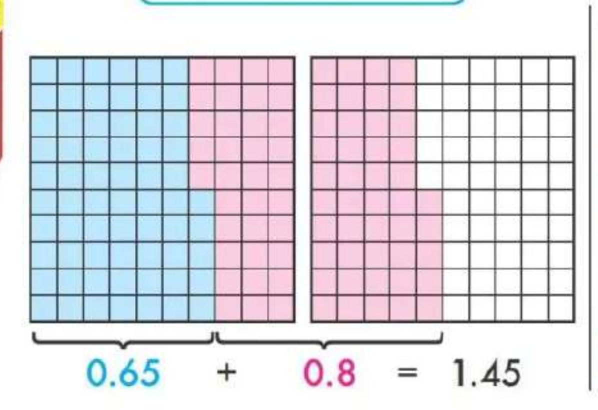
Use the place value chart

Whole Number			Decimal Point	Decimals	
Ones					
H	T	O		Tenths	Hundredths
		0	.	1	4
		0	.	4	5
		0	.	5	9

$$\begin{array}{r} 0.14 \\ +\ 0.45 \\ \hline 0.59 \end{array}$$

d) 0.65 + 0.8

Use the model



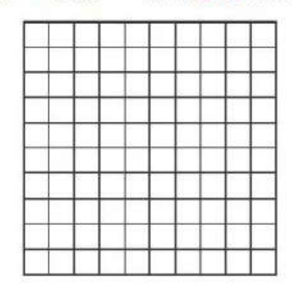
Use the place value chart

Whole Number			Decimal Point	Decimals	
Ones					
H	T	O		Tenths	Hundredths
		0	.	6	5
		0	.	8	
		1	.	4	5

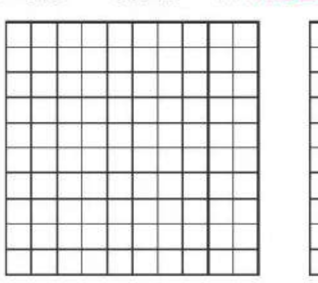
$$\begin{array}{r} 0.65 \\ +\ 0.8 \\ \hline 1.45 \end{array}$$

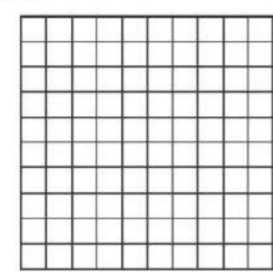
5 Use the following decimal models to find the result:

a) 0.4 + 0.3 = 0.7

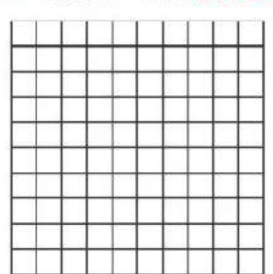


d) 0.8 + 0.72 = 1.52

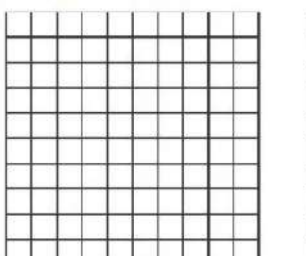


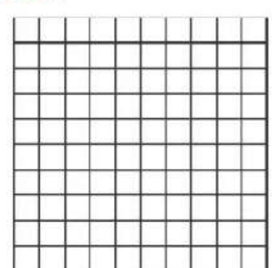


b) 0.5 + 0.25 = 0.75

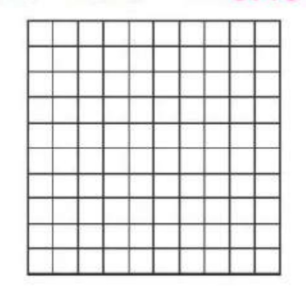


e) 0.68 + 0.75 = 1.43

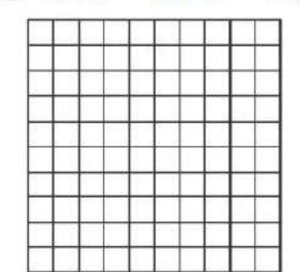


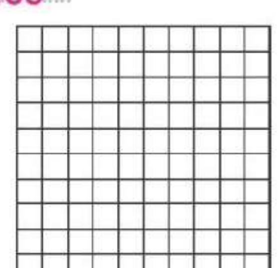


c) 0.28 + 0.15 = 0.43

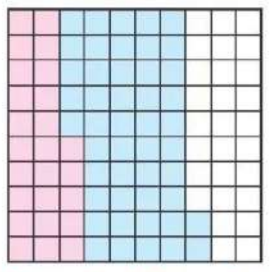


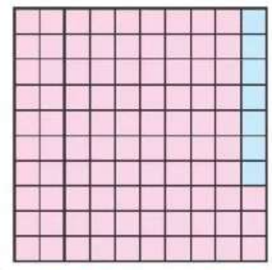
f) 0.85 + 0.78 = 1.63

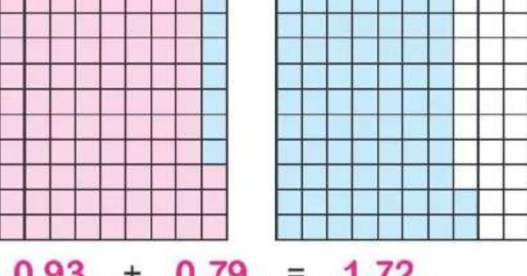




6 **Write an expression to match the models. Write an addition problem, and then find the result:**







ⓐ 0.25 + 0.47 = 0.72 ⓑ 0.93 + 0.79 = 1.72

7 **Use the place value chart to find the sum:**


32.78 + 8.891 = 41.671

Whole Number			Decimal Point	Decimals		
Ones						
H	T	O		Tenths	Hundredths	Thousandths
	3	2	.	7	8	
		8	.	8	9	1
	4	1	.	6	7	1

ⓐ 0.8 + 3.09 = 3.89

Whole Number			Decimal Point	Decimals		
Ones						
H	T	O		Tenths	Hundredths	Thousandths
		0	.	8		
		3	.	0	9	
		3	.	8	9	

ⓑ 0.245 + 3.89 = 4.135

Whole Number			Decimal Point	Decimals		
Ones						
H	T	O		Tenths	Hundredths	Thousandths
		0	.	2	4	5
		3	.	8	9	
		4	.	1	3	5

ⓒ 4.028 + 2.83 = 6.858

Whole Number			Decimal Point	Decimals		
Ones						
H	T	O		Tenths	Hundredths	Thousandths
		4	.	0	2	8
		2	.	8	3	
		6	.	8	5	8

ⓓ 125.36 + 3.08 = 128.44

Whole Number			Decimal Point	Decimals		
Ones						
H	T	O		Tenths	Hundredths	Thousandths
1	2	5	.	3	6	
		3	.	0	8	
1	2	8	.	4	4	

ⓔ 45.562 + 189.158 = 234.72

Whole Number			Decimal Point	Decimals		
Ones						
H	T	O		Tenths	Hundredths	Thousandths
	4	5	.	5	6	2
1	8	9	.	1	5	8
2	3	4	.	7	2	0

Theme 1

Learn

Adding Decimals

Ex. 345.2 + 2.893

Vertically:

Arrange the digits correctly, so that the decimal point is under the decimal point, the Ones under the Ones, and the Hundreds under the Hundreds, and so on, and then add.

(Empty spaces can be filled with zeros)

$$\begin{array}{r} 345.200 \\ +\quad 2.893 \\ \hline 348.093 \end{array}$$

Horizontally:

345.200 + 2.893 = 248.093

8 Add:

ⓐ $\begin{array}{r} 45.368 \\ +\ 2.758 \\ \hline 48.126 \end{array}$

ⓑ $\begin{array}{r} 0.358 \\ +\ 34.19 \\ \hline 34.548 \end{array}$

ⓒ $\begin{array}{r} 45.98 \\ +\ 125.3 \\ \hline 171.28 \end{array}$

ⓓ 36.89 + 4.5 = 41.39

ⓔ 58 + 3.89 = 61.89

9 Complete: (As in the example)

Ex. 25 Thousandths + 6 Hundredths = 85 Thousandths.

25 Thousandths + 60 Thousandths = 85 Thousandths
(0.025 + 0.060 = 0.085)

ⓐ **3** Thousandths + **4** Thousandths = 7 Thousandths

ⓑ **7** Thousandths + **4** Thousandths = 11 Thousandths

ⓒ **39** Thousandths + **5** Thousandths = 44 Thousandths

ⓓ **3** Hundredths + **99** Thousandths = 129 Thousandths

10 **Diaa travels from Cairo to Alexandria and stops to rest in Tanta. If the distance between Cairo and Tanta is 92.61 km and the distance between Tanta and Alexandria is 147.7 km, what is the distance traveled by Diaa?**

92.61 + 147.7 = 240.31 km



10

1 Complete the following:

(a) Estimate: 0.9 + 0.2 ⟶ 1 + 0 = 1

(Benchmark Strategy)

(b) Estimate: 3.24 + 12.55 ⟶ 3.2 + 12.6 = 15.8

(To the nearest Tenth)

(c) Estimate: 55.758 + 36.964 ⟶ 55.76 + 36.96 = 92.72

(to the nearest Hundredth)

(d) 5 Thousandths + 12 Thousandths = 17 Thousandths

2 Use the place value chart find the sum of 32.158 + 209.574:

	Whole Number			Decimal Point	Decimals		
	Ones						
	H	T	O		Tenths	Hundredths	Thousandths
		3	2	.	1	5	8
	2	0	9	.	5	7	4
The sum	2	4	1	.	7	3	2



Modeling Subtracting Decimals – Estimating Decimal Differences – Subtracting to the Thousandths Place – Decimal Story Problems



Learn: Modeling Decimal Subtraction

First:

The Decimal Model

Represent the greatest decimal fraction on the model, and then remove the squares of the smaller decimal fraction.

Second:

The Place Value Chart

Write the numbers in the place value chart and then subtract.

Ex. ⓐ 0.8 – 0.3

Use the model

0.8 – 0.3 = 0.5

Use the place value chart

Whole Number			Decimal Point	Decimals	
Ones					
H	T	O		Tenths	Hundredths
		0	.	8	
		0	.	3	
		0	.	5	

$$\begin{array}{r} 0.8 \\ -\ 0.3 \\ \hline 0.5 \end{array}$$

ⓑ 0.7 – 0.46

Use the model

0.7 – 0.46 = 0.24

Use the place value chart

Whole Number			Decimal Point	Decimals	
Ones					
H	T	O		Tenths	Hundredths
		0	.	7	
		0	.	4	6
		0	.	2	4

$$\begin{array}{r} 0.7 \\ -\ 0.46 \\ \hline 0.24 \end{array}$$

ⓒ 0.32 – 0.12

Use the model

0.32 – 0.12 = 0.20

Use the place value chart

Whole Number			Decimal Point	Decimals	
Ones					
H	T	O		Tenths	Hundredths
		0	.	3	2
		0	.	1	2
		0	.	2	0

$$\begin{array}{r} 0.32 \\ -\ 0.12 \\ \hline 0.20 \end{array}$$

ⓓ 1.12 – 0.45

Use the model

1.12 – 0.45 = 0.67

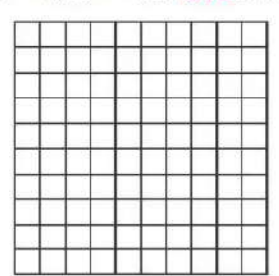
Use the place value chart

Whole Number			Decimal Point	Decimals	
Ones					
H	T	O		Tenths	Hundredths
		1	.	1	2
		0	.	4	5
		0	.	6	7

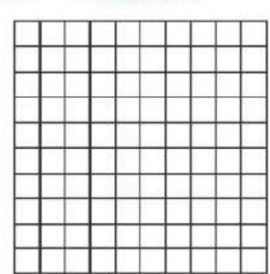
$$\begin{array}{r} 1.12 \\ -\ 0.45 \\ \hline 0.67 \end{array}$$

1 Use the decimal models to find the result:

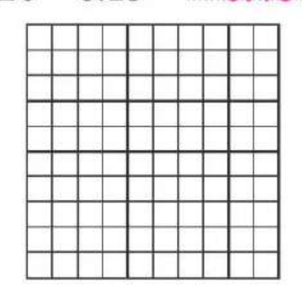
ⓐ 0.5 – 0.2 = 0.3



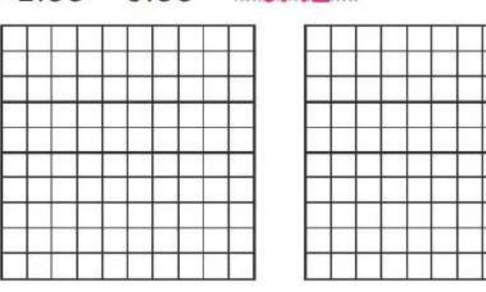
ⓑ 0.8 – 0.35 = 0.45



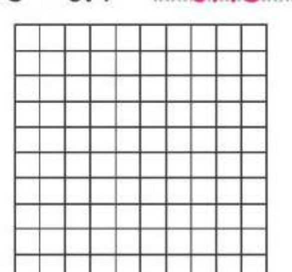
ⓒ 0.28 – 0.15 = 0.13



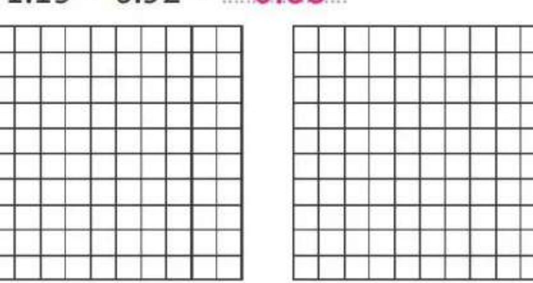
ⓓ 1.08 – 0.66 = 0.42



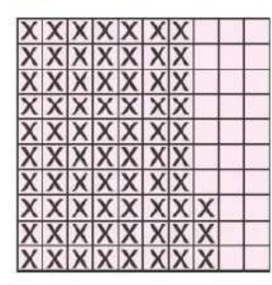
e) 0.58 – 0.4 = 0.18

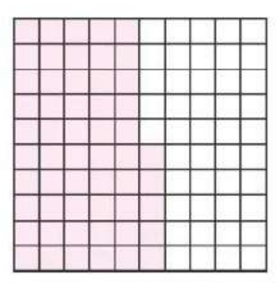


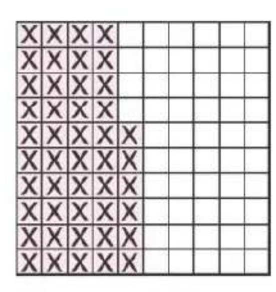
f) 1.15 – 0.52 = 0.63



2 **Write an expression to match the models. Write a subtraction problem, and then find the result:**







a) 1.55 – 0.73 = 0.82

b) 0.46 – 0.46 = 0

3 **Use the place value charts to find the difference:**

Ex. 24.8 – 7.245 = 17.555

Whole Number			Decimal Point	Decimals		
Ones						
H	T	O		Tenths	Hundredths	Thousandths
	2	4	.	8		
		7	.	2	4	5
	1	7	.	5	5	5

a) 12.8 – 3.09 = 9.71

Whole Number			Decimal Point	Decimals		
Ones						
H	T	O		Tenths	Hundredths	Thousandths
	1	2	.	8		
		3	.	0	9	
		9	.	7	1	

b) 9.245 – 0.86 = 8.385

Whole Number			Decimal Point	Decimals		
Ones						
H	T	O		Tenths	Hundredths	Thousandths
		9	.	2	4	5
		0	.	8	6	
		8	.	3	8	5

c) 8.027 – 0.8 = 7.227

Whole Number			Decimal Point	Decimals		
Ones						
H	T	O		Tenths	Hundredths	Thousandths
		8	.	0	2	7
		0	.	8		
		7	.	2	2	7

d) 142.37 – 4.08 = 138.29

Whole Number			Decimal Point	Decimals		
Ones						
H	T	O		Tenths	Hundredths	Thousandths
1	4	2	.	3	7	
		4	.	0	8	
1	3	8	.	2	9	

e) 250.9 – 9.245 = 241.655

Whole Number			Decimal Point	Decimals		
Ones						
H	T	O		Tenths	Hundredths	Thousandths
2	5	0	.	9		
		9	.	2	4	5
2	4	1	.	6	5	5

Learn

Subtracting Decimals



48.3 – 5.245

Vertically:

Arrange the digits correctly, so that the decimal point is under the decimal point, the Ones under the Ones, and the Hundreds under the Hundreds, and so on, and then subtract.

(Empty spaces can be filled with zeros)

```
          9
        2 10 10
  48 . 3 0 0
-  5 . 2 4 5
  -----------
  43 . 0 5 5
```

Horizontally: 48.300 – 5.245 = 43.055

4 Subtract:

a)
```
   75.48
 –  7.082
 ---------
   68.398
```

b)
```
   30
 –  5.17
 -------
   24.83
```

c)
```
   102.002
 –  12.347
 ---------
    89.655
```

d) 82.82 – 45 = 37.82

e) 58 – 8.079 = 49.921

5 Complete: (As in the example)

Ex. 75 Thousandths – 3 Hundredths = 45 Thousandths.

75 Thousandths	+	30 Thousandths	=	45 Thousandths
(0.075	+	0.030	=	0.045)

ⓐ **45** Thousandths – **12** Thousandths = ...33...... Thousandths

ⓑ **5** Hundredths – **13** Thousandths = ...37........ Thousandths

ⓒ **4** Tenths – **75** Thousandths = ...325..... Thousandths

ⓓ **214** Thousandths – **18** Hundredths = ...34....... Thousandths

Learn

Estimating Decimal Differences

1 Benchmark Decimals Strategy:

Ex. **Estimate the following using Benchmark Decimals:**

ⓐ **0.65 – 0.456 → 0.5 – 0.5 = 0**

0.65 is close to 0.5

0.456 is close to 0.5

ⓑ **0.98 – 0.001 → 1 – 0 = 1**

0.98 is close to 1

0.001 is close to 0

6 **Estimate the difference of the following decimals:**

ⓐ 0.89 – 0.533 ⟶ **Estimate:** ......1...... – ......0.5...... = ...0.5......

ⓑ 0.42 – 0.03 ⟶ **Estimate:** ......0.5...... – ......0...... = ...0.5......

ⓒ 0.612 – 0.021 ⟶ **Estimate:** ......0.5...... – ......0...... = ...0.5......

ⓓ 0.55 – 0.482 ⟶ **Estimate:** ......0.5...... – ......0.5...... = ...0......

2 Rounding Strategy:

Ex. **Estimate the difference using rounding strategy:**

58.538 – 23.845 **(To the nearest Hundredths)**

= 58.54 – 23.85 = 34.69

7 **Estimate the difference of the following decimals:**

(Use Rounding to the lowest place value Strategy)

ⓐ 8.34 – 3.43 ⟶ **Estimate:** ......8.3...... – ......3.4...... = ...4.9......

ⓑ 345.1 – 80.91 ⟶ **Estimate:** ......345...... – ......80.9...... = ...264.1......

ⓒ 7.21 – 4.56 ⟶ **Estimate:** ......7.2...... – ......4.6...... = ...2.6......

ⓓ 0.981 – 0.089 ⟶ **Estimate:** ......0.98...... – ......0.09...... = ...0.89......



8 The width of the Tahya Misr Bridge, which connects northern and eastern Cairo to western Cairo across the Nile River, is 67.3 meters, and the Jiaxing-Shaoxing Sea Bridge in Japan is less in width than the Tahya Misr Bridge by 11.7 meters. How wide is the Jiaxing-Shaoxing Sea Bridge?

67.3 – 11.7 = 55.6 m .

9 Rashad and his father went fishing. Each of them caught a giant fish, the mass of the first fish was 53.25 kilograms, and the mass of the other fish reached 46.8 kilograms. What is the mass of the two fish together?

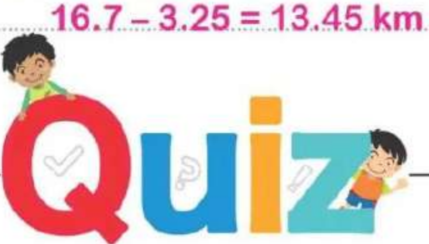
53.25 + 46.8 = 100.05 km .

10 The length of the Tahya Misr Bridge is 16.7 km. If Ramy travels along the length of the Tahya Misr Bridge and then returns this distance again, how many kilometers in total does he travel?

16.7 + 16.7 = 33.4 km .

11 Sami rides his bike along the Tahya Misr Bridge walkway, which is 16.7 kilometers long. He rode 3.25 kilometers. How many kilometers does he still need to ride to reach the end of the bridge?

16.7 – 3.25 = 13.45 km .



/ 10

1 Complete the following:

a) 25.82 – 12 = 13.82 (25.70 or 24.62 or 13.82 or 15.8)

b) 36.36 – 6.3 = 30.06 (30.06 or 35.73 or 42.66 or 30.33)

c) 45 Hundredths – 12 Thousandths = 438 Thousandths (33 or 57 or 438 or 462)

d) Estimate: 8.34 – 3.43 → 5 (Benchmark) (5 or 5.5 or 4 or 4.5)

2 Subtract:

a)
$$\begin{array}{r} 326.578 \\ -\,122.244 \\ \hline 204.334 \end{array}$$

b)
$$\begin{array}{r} 68.367 \\ -\,2.455 \\ \hline 65.912 \end{array}$$

c)
$$\begin{array}{r} 84 \\ -\,12.592 \\ \hline 71.408 \end{array}$$





2.1 Expressions, Equations, and the Real World

Lesson 1 Expressions, Equations, and Variables

Learning Objectives:

By the end of this lesson, the student will be able to:

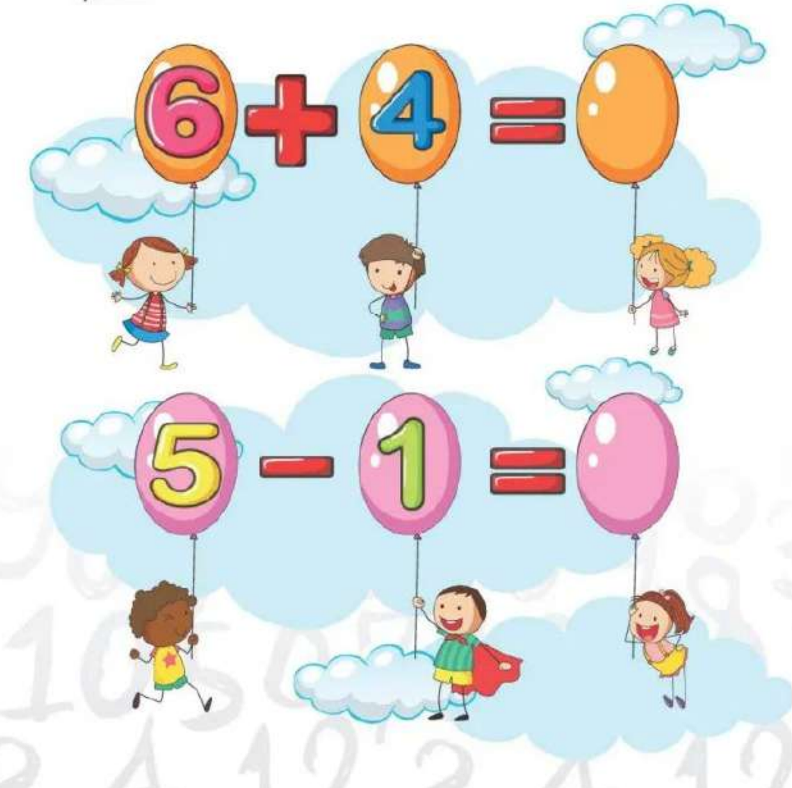
- Explain the difference between expressions and equations.
- Explain why there might be an unknown in an expression or equation.
- Use letters or symbols to represent unknowns in expressions and equations.

Lessons 2&3 Variables in Equations / Telling Stories with Numbers

Learning Objectives:

By the end of these lessons, the student will be able to:

- Apply the relationship between addition and subtraction to find the value of the unknown in an equation.
- Write story problems involving addition and subtraction of decimal numbers.
- Solve equations involving decimal numbers to the Thousandths place.





Expressions, Equations, and Variables

Remember

Variable	Expression	Equation
It's a letter or symbol that represents the **unknown value** in an equation, such as: x, y, z, ...	It's a set of fixed numbers and variables that line up next to each other, such as: x + 5, 3 X y	It's a mathematical sentence that includes an equal relationship between two mathematical sentences, such as: 5 + x = 9, y = 5 X 3

1 **Put a tick (✓) to classify the following mathematical sentences into "Equation" or Mathematical Expression" or "Other":**

		Equation	Mathematical Expression	Other
a	4.7 + 3.6 = m	✓		
b	6.4 + 3.2 + 8		✓	
c	56 – x = 47.5	✓		
d	3.4 + L		✓	
e	Aya ran 8 km last week.			✓
f	3.5 + 2.456 = 2.5 + 3.456	✓		
g	37.125 – 13.7		✓	
h	Amir had 3.5 kg of apples.			✓

Learn

Using Letters or Symbols to Represent Unknown Values in Mathematical Expressions and Equations

Ex.

Yassin bought a pen and a ruler. He paid 14.5 pounds for them. If the price of the pen is 6.25 pounds, what is the price of the ruler?

Write an equation to represent the price of the ruler.

The previous example can be expressed as follows:

The price of the pen + The price of the ruler = What Yassin paid

What Yassin paid = 14.5 pounds.
The price of the pen = 6.25 pounds.
The price of the ruler is unknown.

→ 6.25 + unknown = 14.5

- Replace the word unknown with one of the letters (a variable) "y".
- **So, the equation that represents the price of the ruler is:**

$6.25 + y = 14.5$ or $y = 14.5 - 6.25$

2 **Read the following story problems. Make an equation for each problem:**

ⓐ Ahmed had **25.15** pounds, and he bought a toy for **14.5** pounds. How much money is left with Ahmed?

$w = 25.15 - 14.5$

$w = 10.65$

ⓑ A class in a school has **45** students. **28** of them are girls. How many boys are there in this class?

$y = 45 - 28$

$y = 17$

c) A farm had 4,200 chickens. 3,350 chickens were sold in a week.
How many chickens are left on the farm?

m = 4,200 – 3,350

m = 850 .

d) Ahmed bought a car for 90,990 pounds and bought a house for his family for 750,250 pounds.
How much did Ahmed spend to buy the car and the house?

a = 750,250 + 90,990

a = 841,240 .



—
10

1 Find the result:

a) 2.8 + 0.2 = b is a/an .... (equation or mathematical expression or other)

b) 9.7 + n is a/an .... (equation or mathematical expression or other)

c) Ali has 75 LE is a/an .... (equation or mathematical expression or other)

2 Mai has 38 LE. She spent 23 LE.
How much money does she have now? (Make an equation to solve)

A = 38 – 23

A = 15

4 A group of 12 children, 7 of them are girls.
What is the number of boys in this group?
(Make an equation to solve)

B = 12 – 7

B = 5

Theme 1



Lessons 2&3 Variables in Equations Telling Stories with Numbers

Learn

Determining the Value of the Unknown

You can use mental math to determine the value of the (unknown) variable in the equation.

Ex. Find the value of (a) in each of the following:

$0.5 + a = 0.9$	$a + 0.2 = 1.7$	$8.5 - a = 2.3$	$a - 2.4 = 3.5$
$a = 0.9 - 0.5$	$a = 1.7 - 0.2$	$a = 8.5 - 2.3$	$a = 2.4 + 3.5$
$a = 0.4$	$a = 1.5$	$a = 6.2$	$a = 5.9$

1 Use mental math to estimate the equations, and then solve them:

ⓐ $8.235 + p = 10.224$

$p = 10.224 - 8.235$

$p = 1.989$

ⓑ $t - 2.445 = 0.26$

$t = 2.445 + 0.26$

$t = 2.705$

ⓒ $6.82 - h = 1.023$

$h = 6.82 - 1.023$

$h = 5.797$

ⓓ $v + 42.809 = 100.01$

$v = 100.01 - 42.809$

$v = 57.201$

ⓔ $5.52 + 2.041 + m = 9.271$

$m = 9.271 - (5.52 + 2.041)$

$m = 9.271 - 7.561$, $m = 1.71$

ⓕ $2.377 + 3.1 = 1.52 + a$

$a = 5.477 - 1.52$

$a = 3.957$



Write a story problem for the following equation, then solve it:

$$53.5 + m = 92.7$$

Answer:

Bassem takes the bus from Cairo to Tanta. The distance is 92.7 km. The bus stops 53.5 km away in the city of Banha to take more passengers. How far is Banha from Tanta?

$53.5 + m = 92.7$ **Then** $m = 92.7 - 53.5$

$m = 39.2$

(The distance is 39.2 km)

2 Write a **story problem** representing each equation, and then solve it:

ⓐ $x + 2.75 = 12.5$

Mark bought a pen for 2.75 L.E and bought a pencil. if Mark paid 12.5 L.E, What is the price of pencil

"Many answers may be written"

X = 12.5 – 2.75 = 9.75 L.E

ⓑ $34.750 - s = 15.25$

Ibrahim has 34.750 L.E, He bought a book and the remainder money with him is 15.25 L.E, what is the price of the book

"Many answers may be written"

S = 34.750 – 15.25 = 19.5 L.E



$\frac{\quad}{10}$

1 Complete the following:

ⓐ If $3.7 + m = 5.2$, then $m = 5.2 - 3.7$

$m = 1.5$

ⓑ If $h - 3.2 = 4.89$, then $h = 4.89 + 3.2$

$h = 8.09$

ⓒ If $9.9 - a = 3.6$, then $a = 9.9 - 3.6$

$a = 6.3$

2 Choose the correct answer:

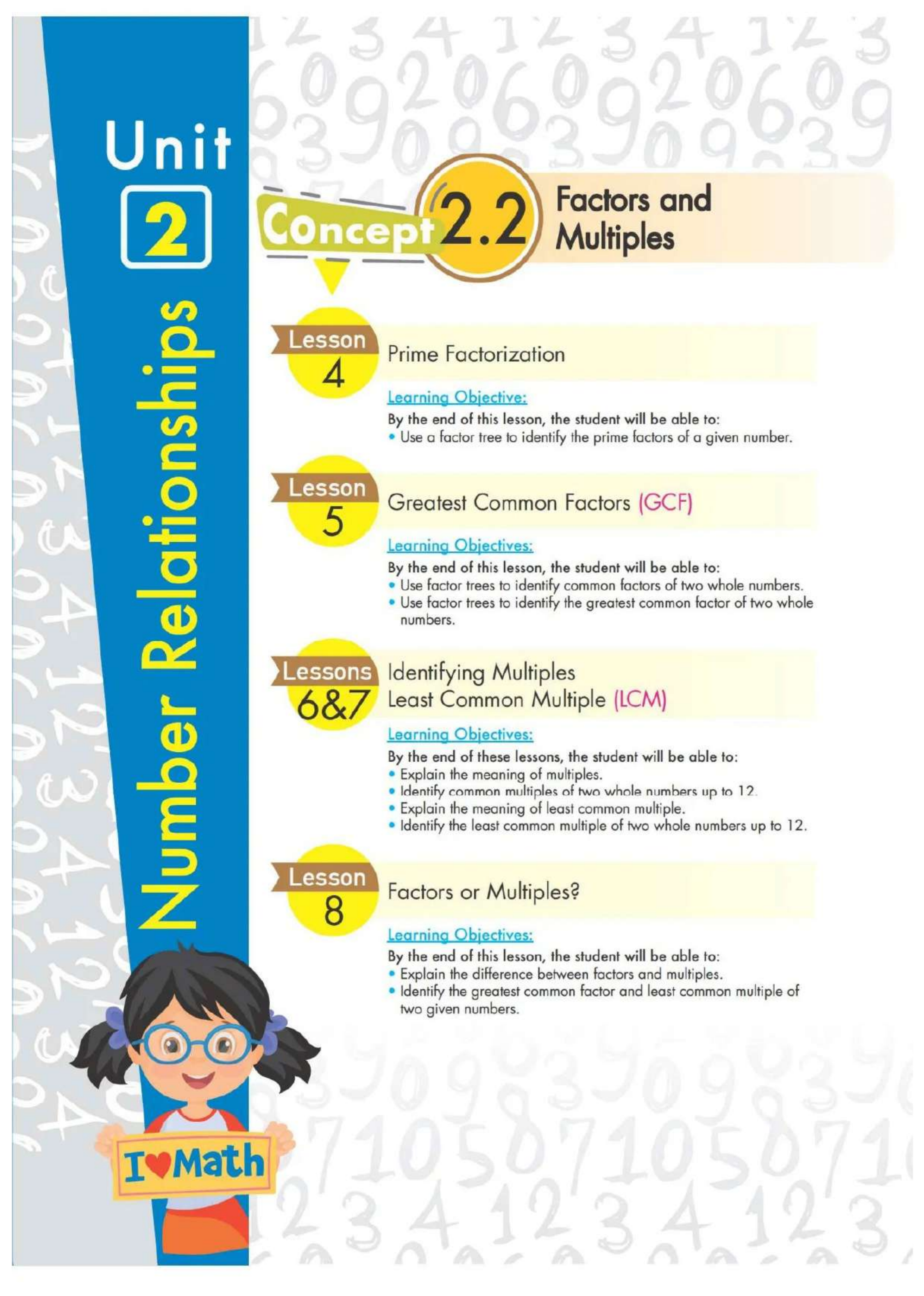
ⓐ If $2.1 + 1.6 + c = 5$, then $c =$ 1.3 . (1.7 or 0.7 or 8.7 or **1.3**)

ⓑ If $6.5 - 2.4 = n + 3$, then $n =$ 1.1 .

(7.1 or **1.1** or 8.9 or 11.9)

3 Write a story problem representing the equation ($a - 15 = 12$).
Then solve it :

$a = 12 + 15$ $a = 27$ LE



Unit 2

Number Relationships

Concept 2.2 Factors and Multiples

Lesson 4 Prime Factorization

Learning Objective:

By the end of this lesson, the student will be able to:

- Use a factor tree to identify the prime factors of a given number.

Lesson 5 Greatest Common Factors (GCF)

Learning Objectives:

By the end of this lesson, the student will be able to:

- Use factor trees to identify common factors of two whole numbers.
- Use factor trees to identify the greatest common factor of two whole numbers.

Lessons 6&7 Identifying Multiples Least Common Multiple (LCM)

Learning Objectives:

By the end of these lessons, the student will be able to:

- Explain the meaning of multiples.
- Identify common multiples of two whole numbers up to 12.
- Explain the meaning of least common multiple.
- Identify the least common multiple of two whole numbers up to 12.

Lesson 8 Factors or Multiples?

Learning Objectives:

By the end of this lesson, the student will be able to:

- Explain the difference between factors and multiples.
- Identify the greatest common factor and least common multiple of two given numbers.

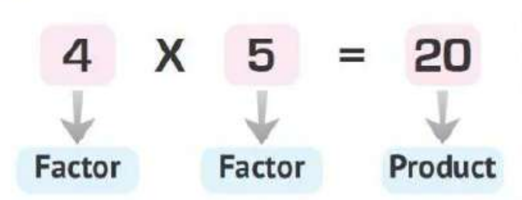


Prime Factorization

Remember

Factors

Factors are the numbers that are multiplied to form a product.
Or the factor of a number divides the number equally without a remainder.



Methods for Finding the Factors of a Number

Factor T-chart	Factor Rainbow	Factor Tree
18: 1 | 18, 2 | 9, 3 | 6	18: 1 2 3 6 9 18	18 → 1 2 3 6 9 18

Important Notes:

- 2 is a factor of all even numbers, whose Ones digit is 0, 2, 4, 6, or 8.
- 3 is a factor of numbers, whose sum of digits is divisible by 3 without a remainder.
- 5 is a factor of numbers, whose Ones digit is 0 or 5.
- **Prime number:** Is a number greater than one and has only two factors, one and the number itself.
- **All prime numbers are odd, except 2.**
- The smallest prime number is 2.

- **The only even prime number is 2.**
- The smallest odd prime number is **3**.
- **1** is neither a prime number nor a composite number.
- **Prime numbers less than 100 are:**

  2 , 3 , 5 , 7, 11, 13 , 17, 19 , 23 , 29 , 31 , 37, 41, 43 , 47,
  53 , 59 , 61, 67, 71 , 73 , 79 , 83 , 89 , 97
- Any number is a factor and a multiple of itself.

Learn

Prime Factors

Prime Factorization:

It means writing the composite number as the product of prime numbers.

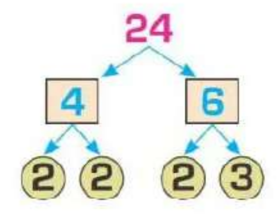
Ex. 8 = 2 X 2 X 2 , 12 = 3 X 2 X 2 , 15 = 3 X 5

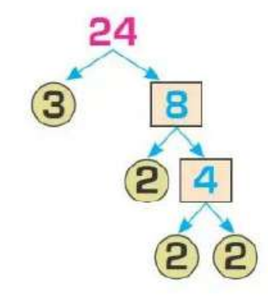
Prime Factorization Using a Factor Tree

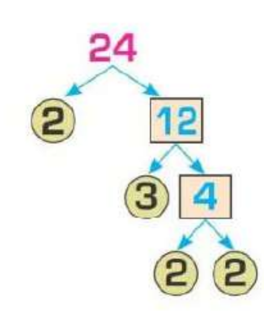
Ex. Factorize 24 into its prime factors:

1. Choose two numbers whose **product** is 24 (1 should not be used).
2. Circle the prime numbers and leave them, then continue factorizing the composite numbers.
3. Stop when all numbers become **prime numbers**.

Note that: All of the following are true, and we get the same result:
24 = 2 X 2 X 2 X 3

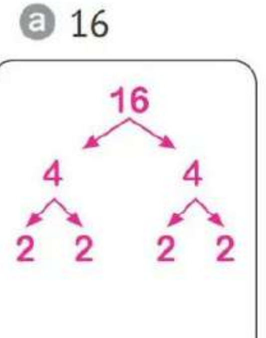


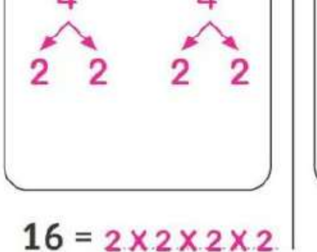




1 **Factorize each number into its prime factors using the factor tree:**

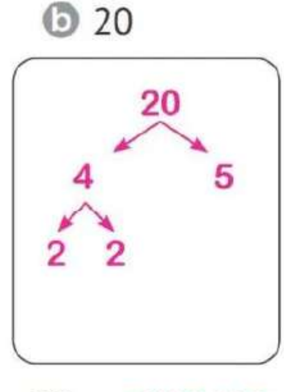
ⓐ 16





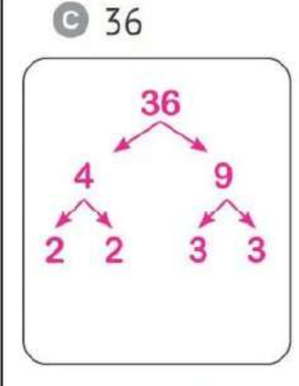
16 = 2 X 2 X 2 X 2

ⓑ 20



20 = 5 X 2 X 2

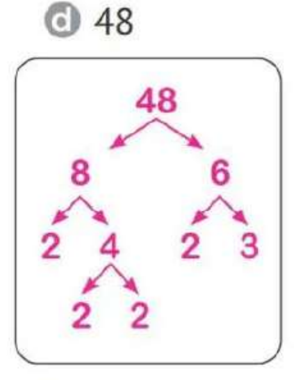
ⓒ 36





36 = 2 X 2 X 3 X 3

ⓓ 48



48 = 2 X 3 X 2 X 2 X 2



10

1 Complete the following:

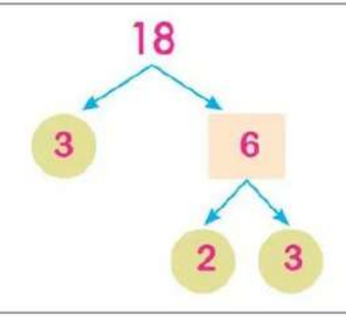
ⓐ The smallest prime number is 2 .

ⓑ The smallest odd prime number is 3 .

ⓒ The prime factors of 30 are 2 , 3 , 5 .

2 Complete the diagram:

18 = 2 X 3 X 3



3 Choose the correct answer:

ⓐ The number whose prime factors 2 , 2 , 3 is 12 .

(7 or 12 or 10 or 6)

ⓑ The number whose prime factors 3 , 5 , 2 is 30 .

(10 or 17 or 13 or 30)



Greatest Common Factors (GCF)

Important Notes: Methods for Factorizing Numbers into their Prime Factors

Ex. Factorize 30 into its prime factors:

1 Factor Tree:

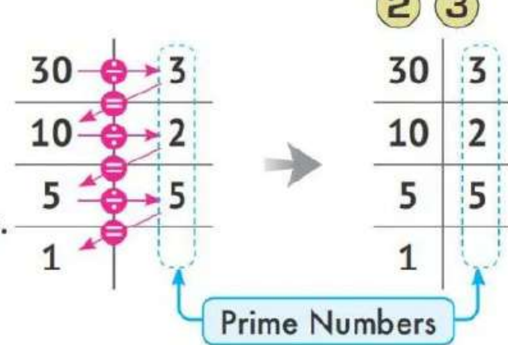
- Choose two numbers whose product is 30.
- Complete the factorization as in the previous lesson.

30 = 2 X 3 X 5

2 Repeated Division:

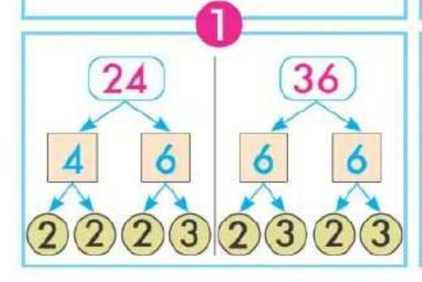
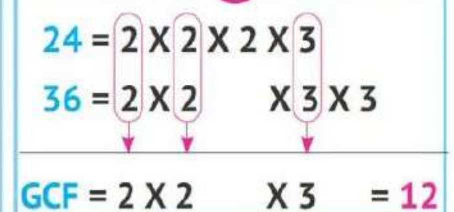
- Divide by one of the **prime factors** of a number.
- Keep dividing by another prime factors.
- Stop when the quotient becomes 1.

30 = 2 X 3 X 5



Learn: Determining the Greatest Common Factor of Two Numbers Using Prime Factors

Ex. Find the GCF for 24 and 36.

1	2	3
Factorize both numbers into their **prime factors**.	Write the prime factors of both numbers, so that the similar factors are on top of each other.	– For every two same factors, we get a factor. – The product of these factors is the **greatest common factor**.
	24 = 2 X 2 X 2 X 3 36 = 2 X 2 X 3 X 3 GCF =	 24 = 2 X 2 X 2 X 3 36 = 2 X 2 X 3 X 3 GCF = 2 X 2 X 3 = 12

So, the GCF for 36 and 24 is **12**.



Theme 1

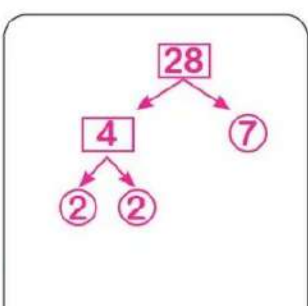
1 Find the GCF of each of the following:

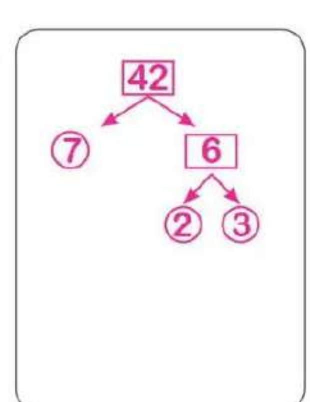
a **28, 42**

28 = 2 X 3 X 7

42 = 2 X 7 X 2

GCF = 2 X 7 = 14



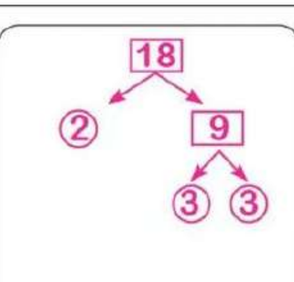


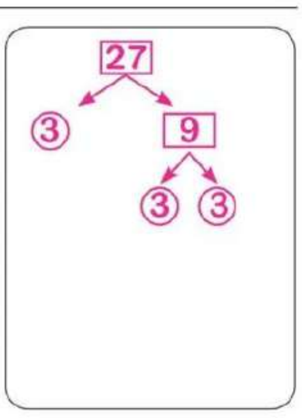
b **18, 27**

18 = 3 X 3 X 2

27 = 3 X 3 X 3

GCF = 3 X 3 = 9



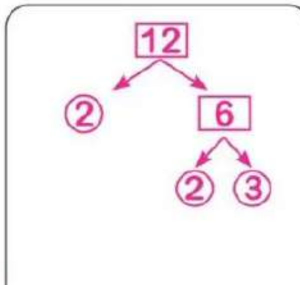


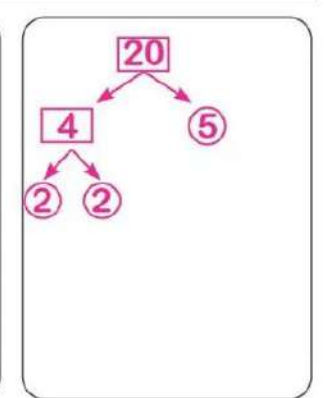
c **12, 20**

12 = 2 X 2 X 3

20 = 2 X 2 X 5

GCF = 2 X 2 = 4



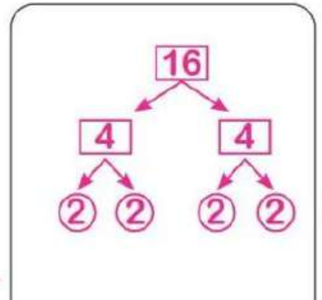


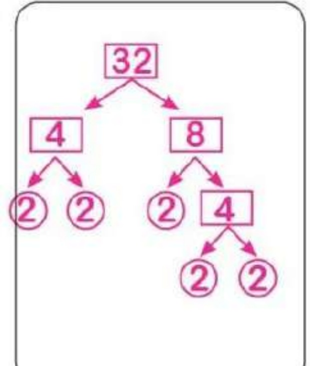
d **16, 32**

16 = 2 X 2 X 2 X 2

32 = 2 X 2 X 2 X 2 X 2

GCF = 2 X 2 X 2 X 2 = 16





2 There are 15 boys and 20 girls in a classroom. The teacher wants to divide the class into the greatest equal groups, so that the numbers of boys and girls are equal in all groups.
(Use the greatest common factor)

GCF = 5

Greatest number of equal groups = 5 groups.



10

1 Choose the correct answer:

a) The GCF of 3 and 6 is ....3.... . (3 or 6 or 18 or 2)

b) The GCF of 4 and 6 is ....2.... . (6 or 10 or 2 or 24)

c) ....1.... Is a factor for all numbers. (1 or 0 or 100 or 2)

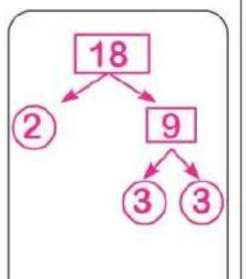
2 Find the GCF of the two numbers 12 and 18

$12 = 2 \times 2 \times 3$

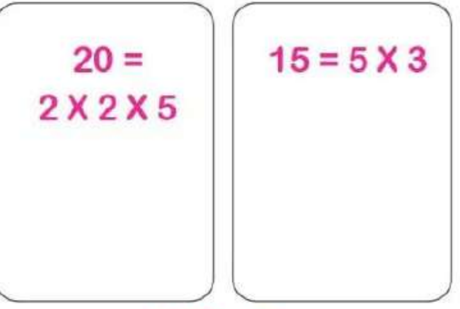
$18 = 2 \times 3 \times 3$

GCF = $2 \times 3 = 6$

12: 3, 4 → 2, 2



3 There are 20 red apples and 15 green apples. What is the largest number of groups in which the apples can be divided so that each group contains the same number of red apples and the same number of green apples?



GCF = 5



Identifying Multiples
Least Common Multiple (LCM)

Theme 1

Remember

Multiple of a number:

It is the product we get when we multiply a certain number by another number.

How to Find the Multiples of a Number

- Count by Jumping on the Number Line
- Use the Hundred Chart
- Use Multiplication Facts

- Zero (0) is the **common multiple** of all numbers.
- All numbers are multiples of 1.
- Multiples of numbers are **infinite**.
- Each number is a multiple of **itself**.
- The product of any two numbers is a **common multiple** of them.

For example: 35 = 5 x 7, so 35 is a common multiple of 7 and 5.

Ex. Find the common multiples of 3 and 4.

- The multiples of 3 are: 0, 3, 6, 9, 12, 15, 18, 21, 24, ...
- The multiples of 4 are: 0, 4, 8, 12, 16, 20, 24, 28, 32, ...
- Common multiples are: 0 , 12 , 24,... *(Other answers are available)*

Ex. Find the common multiples of 12, and 8.

- The multiples of 12 are: 0 , 12 , 24 , 36 , 48,...
- The multiples of 8 are: 0 , 8 , 16 , 24 , 32 , 40 , 48,...
- Common multiples are: 0 , 24 , 48,...

(Other answers are available)

1 ⓐ List the first **10** multiples of **2**: 0 / 2 / 4 / 6 / 8 / 10 / 12 / 14 / 16 / 18

ⓑ List the first **5** multiples of **5**: 0 / 5 / 10 / 15 / 20

ⓒ List the common multiples of **2** and **5** from those you mentioned: 0 / 10 / 20

2 ⓐ List the first **10** multiples of **3**: 0 / 3 / 6 / 9 / 12 / 15 / 18 / 21 / 24 / 27

ⓑ List the first **6** multiples of **6**: 0 / 6 / 12 / 18 / 24 / 30

ⓒ List the first **3** multiples of **9**: 0 / 9 / 18

ⓓ List the common multiples of the numbers **3, 6 and 9** from those you mentioned: 0 / 18

Learn

Least Common Multiple (LCM)

It is the smallest common multiple of two or more numbers with the exception of zero (0).

Ex. **Find the LCM of 6 and 8:**

- The multiples of **6** are: 0, 6, 12, 18, 24, 30, 36, 42, 48, ...
- The multiples of **8** are: 0, 8, 16, 24, 32, 40, 48, 56, 64, ...
- Common multiples are: 0 , 24 , 48 ,... *(Other answers are available)*

The least common multiple of the two numbers (LCM) is 24

3 **List the multiples of 2 and 3 up to 20, then find the LCM:**

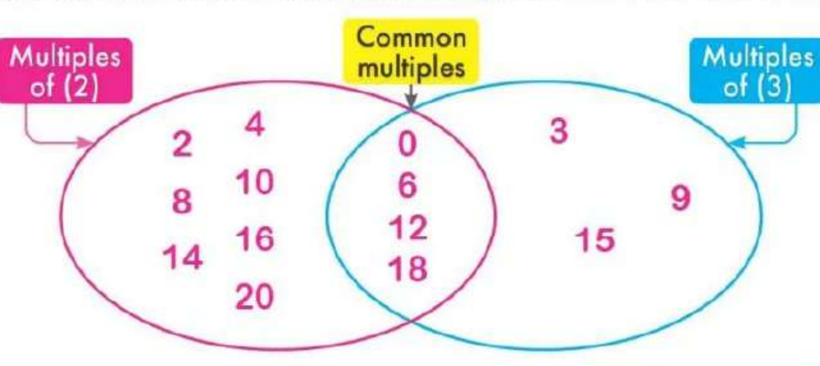
ⓐ The multiples of **2** are: 0 , 2 , 4 , 6 , 8 , 10 , 12 , 14 , 16 , 18 , 20

ⓑ The multiples of **3** are: 0 , 3 , 6 , 9 , 12 , 15 , 18

ⓒ Common multiples are: 0 , 6 , 12 , 18

ⓓ The LCM of **2** and **3** is: 6

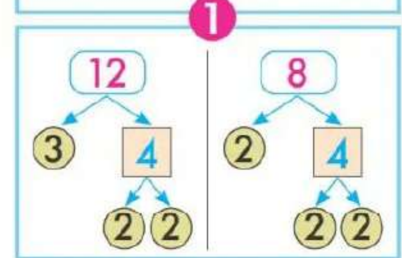
ⓔ **Complete the opposite Venn diagram:**

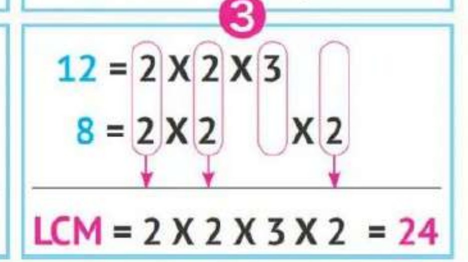


Learn: Determining the Least Common Multiple of Two Numbers Using Prime Factors

Ex. Find the LCM of 12 and 8.

Factorize the two numbers into their **prime factors**.	Write the prime factors of the two numbers, so that the similar factors are on top of each other.	– For every two same factors, we get a common factor. – We also write dissimilar factors. – The product of these factors is the least common multiple.
1	**2** 12 = 2 X 2 X 3 8 = 2 X 2 X 2 LCM =	**3**





So, the LCM of 8 and 12 is **24**.

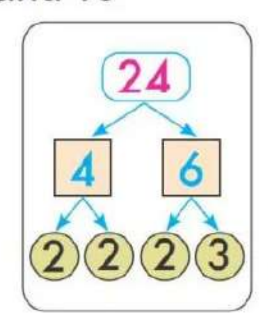
Ex. Find the GCF and LCM of 24 and 16

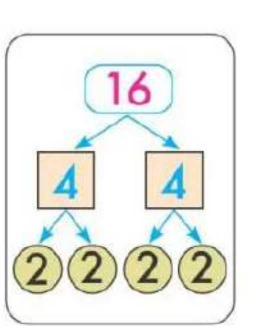
24 = 2 X 2 X 2 X 3

16 = 2 X 2 X 2 X X 2

GCF = 2 X 2 X 2 = 8

LCM = 2 X 2 X 2 X 3 X 2 = 48





4 Find the GCF and LCM of each of the following:

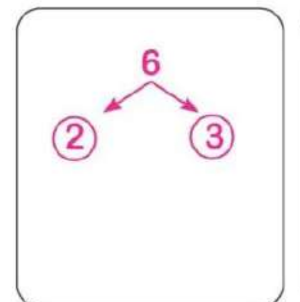
a 6, 9

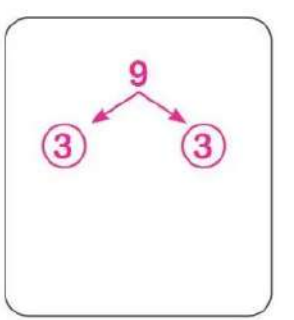
6 = 2 X 3

9 = 3 X 3

GCF = 3

LCM = 2 X 3 X 3 = 18





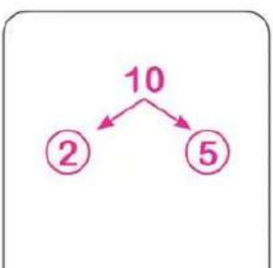
b **10, 15**

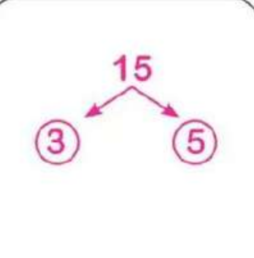
10 = 2 X 5

15 = 5 X 3

GCF = 5

LCM = 2 X 3 X 5 = 30





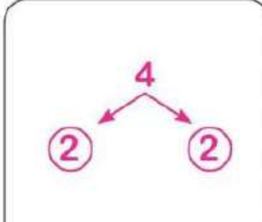
c **4, 8**

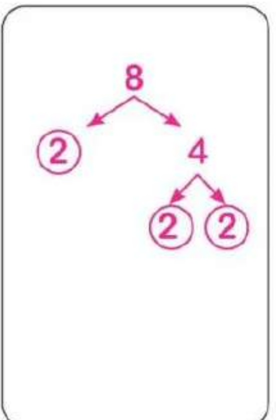
4 = 2 X 2

8 = 2 X 2 X 2

GCF = 4

LCM = 2 X 2 X 2 = 8





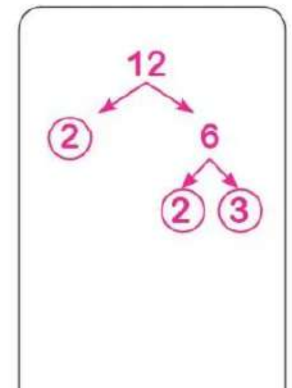
d **12, 9**

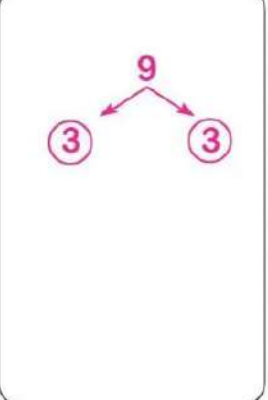
12 = 2 X 2 x 3

9 = 3 X 3

GCF = 3

LCM = 2 X 2 X 3 X 3 = 36





Important Notes:

- The least common multiple of two prime numbers is their **product**.
- If one of the two numbers is a factor of the other number, then the larger number is the **least common multiple** of the two numbers.



10

1 Choose the correct answer:

a) The LCM of 4 and 8 is .... 8 .... (4 or 8 or 12 or 2)

b) The LCM of 2 and 5 is .... 10 .... (10 or 5 or 7 or 20)

c) .... 0 .... is a multiple for all numbers. (1 or 0 or 100 or 2)

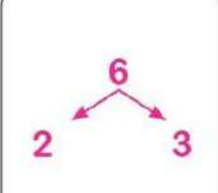
2 Find the GCF and LCM of the two numbers 6 and 8

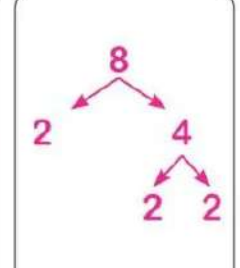
6 = 2 X 3

8 = 2 X 2 X 2

GCF = 2

LCM = 2 X 2 X 3 X 2 = 24





3 Find the GCF and LCM of the two numbers (6 X 5) and (3 X 14)

6 X 5 = 2 X 3 X 5

3 X 14 = 2 X 3 X 7

GCF = 2 X 3 = 6

LCM = 2 X 3 X 5 X 7 = 210



Factors or Multiples?

How to find the GCF and LCM easily

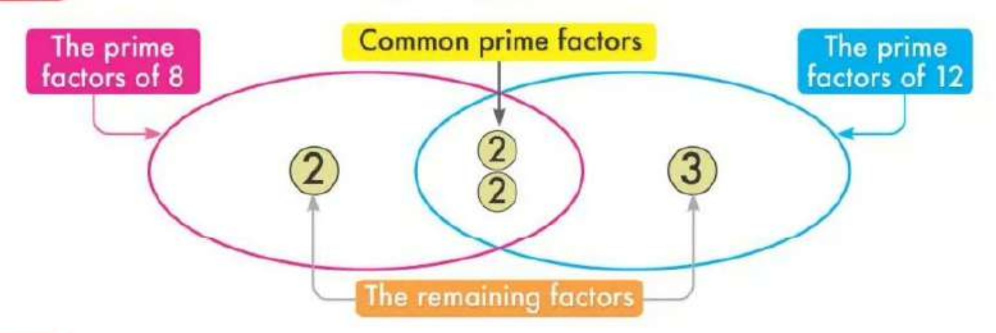
Ex.

Find the GCF and LCM of 8 and 12

1st Step Find prime factors for 8 and 12

$8 = 2 \times 2 \times 2$ $12 = 2 \times 2 \times 3$

2nd Step Draw the following diagram



3rd Step The GCF is the product of common factors.

GCF = $2 \times 2 = 4$

The LCM is the product of all factors.

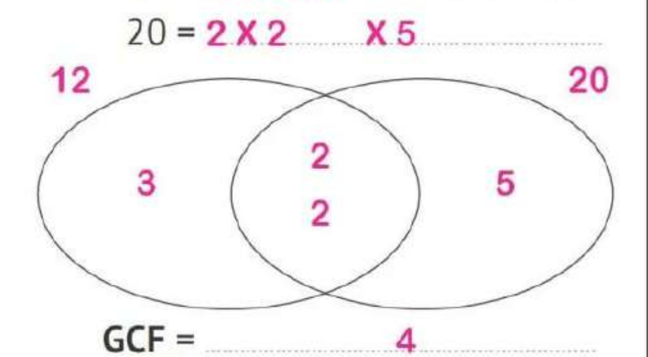
LCM = $2 \times 2 \times 2 \times 3 = 24$

1 Find the GCF and LCM:

ⓐ **12, 20**

$12 = 2 \times 2 \times 3$

$20 = 2 \times 2 \quad \times 5$



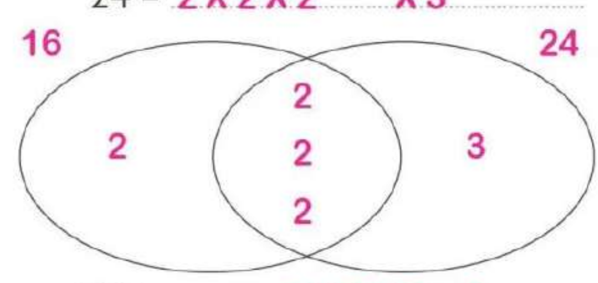
GCF = 4

LCM = $2 \times 2 \times 3 \times 5 = 60$

ⓑ **16, 24**

$16 = 2 \times 2 \times 2 \times 2$

$24 = 2 \times 2 \times 2 \quad \times 3$



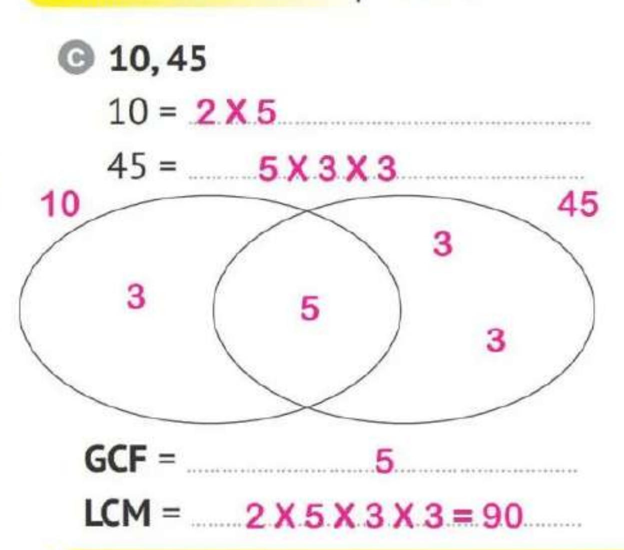
GCF = $2 \times 2 \times 2 = 8$

LCM = $2 \times 2 \times 2 \times 2 \times 3 = 48$

ⓒ **10, 45**

10 = 2 X 5

45 = 5 X 3 X 3



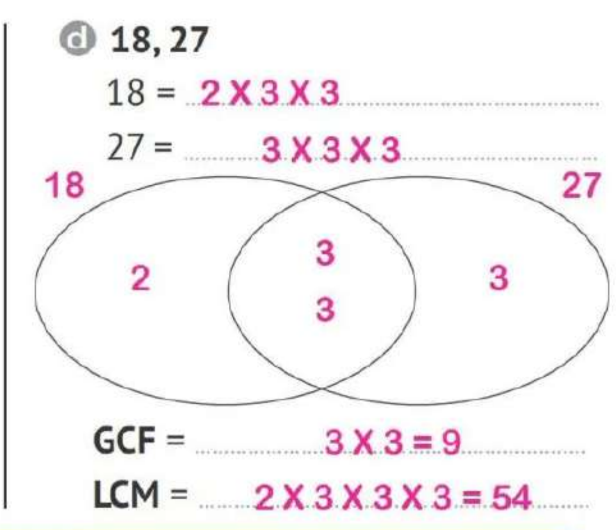
GCF = 5

LCM = 2 X 5 X 3 X 3 = 90

ⓓ **18, 27**

18 = 2 X 3 X 3

27 = 3 X 3 X 3



GCF = 3 X 3 = 9

LCM = 2 X 3 X 3 X 3 = 54

The Difference Between Factors and Multiples

Factors

Factors of a number

Are all pairs whose products are multiplied together to give this number.

Multiples

Multiples of a number

Are the set of number, that appears when jumping by the same number, starting from zero.



Factors

- Not all numbers have the same number of factors.
- When a number is divided evenly, it is divided into factors.
- One of the factors can be obtained by dividing the multiple by the other factor.
- 1 is the factor of all numbers.

Multiples

- All numbers have an **infinite** number of **multiples**.
- The **multiplier** is the multiplying of two factors.
- 0 is the multiple of all numbers.

Story Problems

GCF

Usually Involves

- Breaking
- Dividing
- Cutting things into pieces
- Separating things into groups
- Distributing Equally

LCM

Factors of a number

- Repetition
- Two things happening at the same time
- Multiple items

Note the following two examples:



Omnia has two strips of cloth. One is 35 cm wide, and the other is 75 cm wide. She wants to cut both pieces into strips of equal width that are as wide as possible. How wide should she cut the strips?

(In this example, Omnia wants to divide the cloth into pieces, so we use the GCF in the solution)

Solution: $35 = 5 \times 7$

$75 = 5 \times 5 \times 3$

GCF = 5

The largest width of the strips = 5 cm.

Ex.

Mohamed trains to walk every 7 days and lift weights every 4 days, he did both today. After how many days will Mohamed walk and lift weights on the same day?

(In this example, there is a repetition of what Mohamed does, so we use the LCM in the solution)

Solution: **Multiples of 7:** 0, 7, 14, 21, 28, 35, 42, ...

Multiples of 4: 0, 4, 8, 12, 16, 20, 24, 28, 32 ....

LCM = 28

Mohamed will do both exercises after 28 days.

2 Omar exercises every 12 days. Rana exercises every 8 days. Both friends exercised together today. How many days will it be until they exercise together again?

LCM = 24 days.

3 **Malak baked 30 servings of cakes and 48 servings of baklava for her family. She wants to divide the desserts into containers, so that each person receives the same number of servings. How many containers will she need?**

GCF = 6 containers



10

1 Choose the correct answer:

a) If 3 x 5 = 15, then 15 is a .... of 3 (factor or **multiple** or double or half)

b) If 8 x 4 = 32, then 8 is a .... of 32 (**factor** or multiple or double or half)

c) .... is a factor for all even numbers. (**1** or 0 or 2 or 3)

d) The GCF for 5 and 9 is .... (5 or 9 or **1** or 45)

e) The LCM for 2 and 7 is .... (2 or 7 or **14** or 1)

2 Find the GCF and LCM of the two numbers 8 and 10

8 = 2 X 2 X 2

10 = 2 X 5

GCF = 2

LCM = 2 X 2 X 2 X 5 = 40

3 Shaima waters one of her plants every 8 days and the other every 10 days. If she waters them today, when is the next time you water the two plants together?

LCM for 10 and 8 is 40 Together after 40 days.



Unit 3

Multiplication with Whole Numbers



Concept 3.1 Models for Multiplication

Lesson 1 Using the Area Model to Multiply

Learning Objective:

By the end of this lesson, the student will be able to:

- Multiply using the area model.

Lesson 2 The Distributive Property of Multiplication

Learning Objective:

By the end of this lesson, the student will be able to:

- Explain the relationship between the area model of multiplication and the Distributive Property of Multiplication.









Theme 1



Using the Area Model to Multiply

Using the Rectangle Area Model to Multiply a Two-Digit Number by a Two-Digit Number

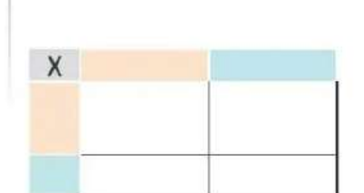
Ex.

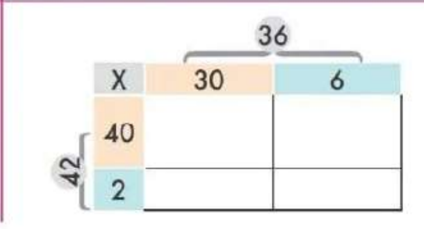
Multiply: 36 X 42

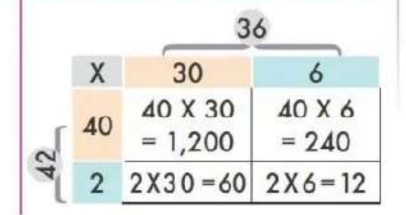
- Create the following **rectangle**.

- **Expand** the first number: 36 = 30 + 6
- Then, the second number: 42 = 40 + 2

- **Multiply** the **rows** and **columns** as shown.
- **Add** the **products** of the multiplication.







So, 36 X 42 = 1,200 + 240 + 60 + 12 = **1,512**

Ex.

Multiply: 69 X 427

So 69 X 427
= 24,000 + 1,200 + 420
+ 3,600 + 180 + 63
= 29,463

427 (69 down the side)

X	400	20	7
60	24,000	1,200	420
9	3,600	180	63

Ex.

Multiply: 45 X 308

So 45 X 308
= 12,000 + 320 + 1,500 + 40
= 13.860

308 (45 down the side)

X	300	8
40	12,000	320
5	1,500	40

1 Multiply using the area model:

ⓐ 4 X 247 = 988

	200	40	7
4	800	160	28

800 + 160 + 28 = 988

ⓑ 62 X 36 = 2,232

	60	2
30	1,800	60
6	360	12

1,800 + 60 + 360 + 12 = 2,232

ⓒ 84 X 273 = 22,932

	200	70	3
80	16,000	5,600	240
4	800	280	12

16,000 + 5,600 + 240 + 800
280 + 12 = 22,932

ⓓ 37 X 602 = 22,274

	600	2
30	18,000	60
7	4,200	14

18,000 + 4,200 + 60 + 14
= 22,274

2 Write the multiplication problem that expresses each model, then solve it:

ⓐ 8 X 527 = 4,216

	500	20	7
8	4,000	160	56

4,000 + 160 + 56 = 4,216

ⓑ 59 X 28 = 1,652

	20	8
50	1,000	400
9	180	72

1,000 + 400 + 180 + 72 = 1,652

ⓒ 43 X 856 = 36,808

	800	50	6
40	32,000	2,000	240
3	2,400	150	18

32,000 + 2,000 + 240 + 2,400
150 + 18 = 36,808

ⓓ 98 X 603 = 59,094

	600	3
90	54,000	270
8	4,800	24

54,000 + 270 + 4,800 + 24
= 59,094

Theme 1

3 Answer the following

a) Ali walks **6** kilometers each day. If he walked **187** days a year, how many kilometers would he walk?

$187 \times 6 = 1,122$ km

b) What if Ali wants to drive **60** kilometers each day? How many kilometers would he drive in **105** days?

$60 \times 105 = 6,300$ km



10

1 Use the area model to find the product of 23 x 65:

65 X 23

1,200 + 180 + 100 + 15

= 1,495

	60	5
20	1,200	100
3	180	15

2 Complete the are model evaluate:

509 X 28

= 10,000 + 4,000 + 180 + 72

= 14,252

	500	9
20	10,000	180
8	4,000	72

3 A family consumes **5** eggs every day. How many eggs does the family consume in **49** days?

	40	9
5	200	45

49 X 5

200 + 45 = 245 eggs



The Distributive Property of Multiplication

Learn — Multiplication Strategies

The Distributive Property of Multiplication:

Ex. 45 X 38

45 X 38 = (40 + 5) X (30 + 8)

= (40 X 30) + (40 X 8) + (5 X 30) + (5 X 8)

= 1,200 + 320 + 150 + 40 = **1,710**

Ex. 69 X 427

69 X 427 = (60 + 9) X (400 + 20 + 7)

= (60 X 400) + (60 X 20) + (60 X 7) + (9 X 400) + (9 X 20) + (9 X 7)

= 24,000 + 1,200 + 420 + 3,600 + 180 + 63

= **29,463**

Ex. 82 X 304

82 X 304 = (80 + 2) X (300 + 4)

= (80 X 300) + (80 X 4) + (2 X 300) + (2 X 4)

= 24,000 + 320 + 600 + 8 = **24,928**

1 Complete the following:

ⓐ $7 \times 63 = 7 \times (\ 60\ +\ 3\ )$

$= (7 \times 60) + (7 \times 3) = 420 + 21 = 441$

ⓑ $9 \times 208 = 9 \times (\ 200\ +\ 8\ ) = (9 \times 200) + (9 \times 8)$

$= 1,800 + 72 = 1,872$

ⓒ $24 \times 38 = (\ 20\ +\ 4\ ) \times (\ 30\ +\ 8\ )$

$= (20 \times 30) + (20 \times 8) + (4 \times 30) + (4 \times 8)$

$= 600 + 160 + 120 + 32 = 912$

ⓓ $82 \times 107 = (\ 80\ +\ 2\ ) \times (\ 100\ +\ 7\ )$

$= (80 \times 100) + (80 \times 7) + (2 \times 100) + (2 \times 7)$

$= 8,000 + 560 + 200 + 14 = 8,774$

ⓔ $62 \times 142 = (\ 60\ +\ 2\ ) \times (\ 100\ +\ 40\ +\ 2\ )$

$= (60 \times 100) + (60 \times 40) + (60 \times 2)$

$+ (2 \times 100) + (2 \times 40) + (2 \times 2)$

$= 6,000 + 2,400 + 120 + 200 + 80 + 4$

$= 8,804$

ⓕ $43 \times 217 = (\ 40\ +\ 3\ ) \times (\ 200\ +\ 10\ +\ 7\ )$

$= (40 \times 200) + (40 \times 10) + (40 \times 7)$

$+ (3 \times 200) + (3 \times 10) + (3 \times 7)$

$= 8,000 + 400 + 280 + 600 + 30 + 21$

$= 9,331$

Learn

Flexible Numbers

Ex. Note that when multiplying the two numbers 83 X 14, 83 and 14 can be divided using more than one method.

ⓐ 83 X 14 = (80 + 3) X (10 + 4)

	10	4
80	800	320
3	30	12

800 + 320 + 30 + 12 = **1,162**

ⓑ 83 X 14 = (40 + 40 + 3) X (10 + 4)

	10	4
40	400	160
40	400	160
3	30	12

400 + 160 + 400 + 160 + 30 + 12 = **1,162**

ⓒ 83 X 14 = (80 + 3) X (7 + 7)

	7	7
80	560	560
3	21	21

560 + 560 + 21 + 21 = **1,162**

ⓓ 83 X 14 = (50 + 30 + 3) X (7 + 7)

	7	7
50	350	350
30	210	210
3	21	21

350 + 350 + 210 + 210 + 21 + 21 = **1,162**

From the above, we find that all methods of dividing numbers lead to the same result.

2 **Use the area model to find the result of (74 x 12).**
Divide the numbers in three different ways:

	70	4
10	700	40
2	140	8

1st way: 74 X 12 = (70 + 4) X (10 + 2) = 888

	70	4
6	420	24
6	420	24

2nd way: 74 X 12 = (70 + 4) X (6 + 6) = 888

	40	30	4
10	400	300	40
2	80	60	8

3rd way: 74 X 12 = (40 + 30 + 4) X (10 + 2) = 888

Learn The Relationship Between the Area Model of Multiplication and the Distributive Property of Multiplication

Note the following examples:

ⓐ **8 X 23**

	20	3
8	160	24

8 X 23 = (8 X 20) + (8 X 3)

=160 + 24 = **184**

ⓑ **3 X 513**

	500	10	3
3	1,500	30	9

3 X 513 = (3 X 500) + (3 X 10) + (3 X 3)

= 1,500 + 30 + 9 = **1,539**

ⓒ **37 X 64**

	60	4
30	1,800	120
7	420	28

37 X 64 = (30 X 60) + (30 X 4) + (7 X 60) + (7 X 4)

= 1,800 + 120 + 420 + 28 = **2,368**

3 **Complete using the area model:**

ⓐ 8 X 37 = 8 X (30 + 7)

= (8 X 30) + (8 X 7)

= 240 + 56 = 296

	30	7
8	240	56

ⓑ 5 X 264 = 5 X (200 + 60 + 4)

= (5 X 200) + (5 X 60) + (5 X 4)

= 1,000 + 300 + 20 = 1,320

	200	60	4
5	1,000	300	20

ⓒ 26 X 73 = (20 + 6) X (70 + 3)

= (20 X 70) + (20 X 3)

+ (6 X 70) + (6 X 3)

= 1,400 + 60 + 420 + 18 = 1,898

	70	3
20	1,400	60
6	420	18

4 Complete the **area model** and find the product:

a) (4 X 50) + (4 X 3) + (20 X 50) + (20 X 3)

= 24 X 53 = 1,272

	20	4
50	1,000	200
3	60	12

b) (20 X 40) + (20 X 7) + (8 X 40) + (8 X 7)

= 28 X 47 = 1,316

	20	8
40	800	320
7	140	56



/ 10

1 Choose the correct answer:

a) (20 X 30) + (20 X 7) + (4 X 30) + (4 X 7) = 24 X 37

(23 X 47 or 20 X 34 or 27 X 30 or 24 X 37)

b) 807 X 62 = (800 X 60) + (800 X 2) + (7 X 60) + (7 X 2)

(7 X 2 or 8 X 6 or 7 X 6 or 8 X 2)

2 Complete the **area model** to find the product:

(30 x 20) + (30 x 7) + (5 x 20) + (5 x 7)

35 X 27 = 945

	30	5
20	600	100
7	210	35

3 Complete the Distributive Property of Multiplication to find the product:

(40 X 600) + (40 X 20) + (40 X 7)

+ (3 X 600) + (3 X 20) + (3 X 7)

= 26,961

	600	20	7
40	24,000	800	280
3	1,800	60	21

Then 627 X 43 = 26,961



Unit 3



Multiplication with Whole Numbers

Concept 3.2 Multiplying 4-Digit Numbers by 2-Digit Numbers



Lessons 3–5

Multiplying by a 2-Digit Number Using Algorithm
Multiplying Multi-Digit Numbers
Multiplication Problems in the Real World

Learning Objectives:

By the end of these lessons, the student will be able to:

- Multiply using the standard algorithm.
- Multiply 4-digit numbers by 2-digit numbers using the standard algorithm.
- Use estimation to check the reasonableness of his/her answers.
- Solve multistep story problems involving multiplication.

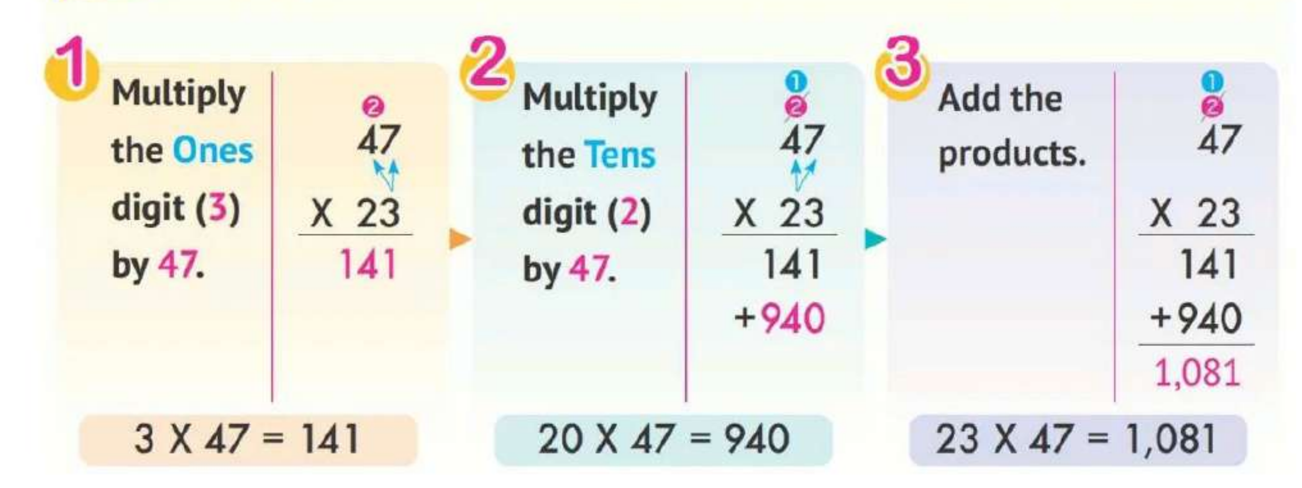


Multiplying by a 2-Digit Number Using Algorithm
Multiplying Multi-Digit Numbers
Multiplication Problems in the Real World

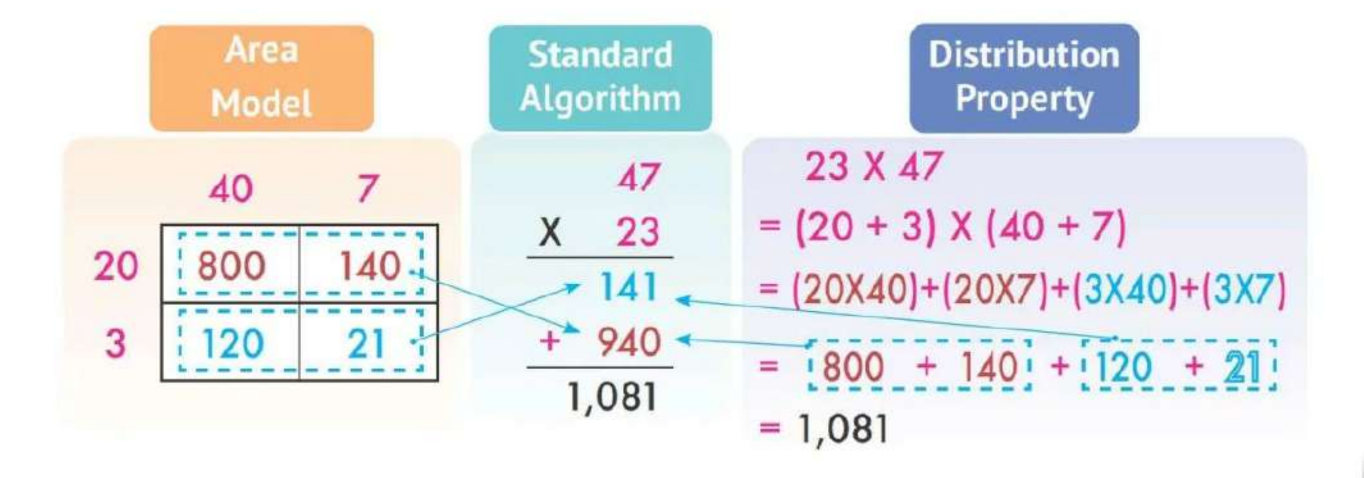
Learn

Standard Algorithm for Multiplication

Ex. Multiply: 45 X 23



Comparing Multiplication Models



1 Find the product using the **standard algorithm** for multiplication:

a)
```
     78
  X  26
  -----
    468
+ 1,560
  -----
  2,028
```

b)
```
     63
  X  37
  -----
    441
+ 1,890
  -----
  2,331
```

c)
```
     92
  X  19
  -----
    828
+   920
  -----
  1,748
```

d)
```
     46
  X  53
  -----
    138
+ 2,300
  -----
  2,438
```

Learn

Multiplying Multi-Digit Numbers by 2-Digit Numbers

Ex. Multiply: 367 X 25

Standard Algorithm

1 Multiply the Ones digit (5) by 367

```
   3 3
   367
 X  25
 -----
  1835
```

5 X 367 = 1,835

2 Multiply the Tens digit (2) by 367

```
   1 1
   3 3
   367
 X  25
 -----
  1835
 +7340
```

20 X 367 = 7,340

3 Add the products.

```
   1 1
   3 3
   367
 X  25
 -----
  1835
 +7340
 -----
  9175
```

25 X 367 = 9,175

Area Model

25 X 367 = 6,000 + 1,200
+ 140 + 1,500
+ 300 + 35
= 9,175

	300	60	7
20	6,000	1,200	140
5	1,500	300	35

Distribution Property

25 X 367 = (20 + 5) X (300 + 60 + 7)
= (20 X 300) + (20 X 60) + (20 X 7) + (5 X 300) + (5 X 60) + (5 X 7)
= 6,000 + 1,200 + 140 + 1,500 + 300 + 35
= 9,175



Ex.

Multiply: 3,578 X 56

Standard Algorithm

1 Multiply the Ones digit (6) by 3,587

```
   3,578
X     56
--------
  21,468
```

6 X 3,578 = 21,468

2 Multiply the Tens digit (5) by 3,587

```
    3,578
X      56
---------
   21,468
 +178,900
```

50 X 3,578 = 178,900

3 Add the products.

```
    3,578
X      56
---------
   21,468
 +178,900
---------
  200,368
```

56 X 3,578 = 200,368

Area Model

56 X 3,578 = 200,368

150,000 + 25,000 + 3,500 + 400 + 18,000 + 3,000 + 420 + 48 = 200,368

	3,000	500	70	8
50	150,000	25,000	3,500	400
6	18,000	3,000	420	48

Distribution Property

56 X 3,578 = (50 + 6) X (3,000 + 500 + 70 + 8)
= (50 X 3,000) + (50 X 500) + (50 X 70) + (50 X 8) + (6 X 3,000) + (6 X 500) + (6 X 70) + (6 X 8)
= 150,000 + 25,000 + 3,500 + 400 + 18,000 + 3,000 + 420 + 48 = 200,368

2 Find the product using the standard algorithm for multiplication:

ⓐ
```
     248
X     72
--------
     496
 +17,360
--------
  17,856
```

ⓑ
```
   1,729
X     56
--------
  10,374
 +86,450
--------
  96,824
```

ⓒ
```
    2,507
X      63
---------
    7,521
 +150,420
---------
  157,941
```

ⓓ
```
    6,008
X      93
---------
   18,024
 +540,720
---------
  558,744
```

3 Find the product using the area model:

a) 39 X 75 = 2,925

	70	5
30	2,100	150
9	630	45

2,100 + 630 + 150 + 45 = 2,925

b) 63 X 208 = 13,104

	200	8
60	12,000	480
3	600	24

12,000 + 480 + 600 + 24 = 13,104

c) 38 X 1,007 = 38,266

	1,000	7
30	30,000	210
8	8,000	56

30,000 + 210 + 8,000 + 56 = 38,266

d) 43 X 217 = 9,331

	200	10	7
40	8,000	400	280
3	600	30	21

8,000 + 400 + 280 + 600 + 30 + 21 = 9,331

e) 25 X 2,163 = 54,075

	2,000	100	60	3
20	40,000	2,000	1,200	60
5	10,000	500	300	15

40,000 + 2,000 + 1,200 + 60 + 10,000 + 500 + 300 + 15 = 54,075

4 Find the product using the Distribution Property:

a) 93 X 24 = (90 + 3) X (20 + 4)
= (90 X 20) + (90 X 4) + (3 X 20) + (3 X 4)
= 1,800 + 360 + 60 + 12 = 2,232

b) 72 X 103 = (70 + 2) X (100 + 3)
= (70 X 100) + (70 X 3) + (2 X 100) + (2 X 3)
= 7,000 + 210 + 200 + 6 = 7,416

c) 52 X 214 = (50 + 2) X (200 + 10 + 4)
= (50 X 200) + (50 X 10) + (50 X 4)
+ (2 X 200) + (2 X 10) + (2 X 4)
= 10,000 + 500 + 200 + 400 + 20 + 8 = 11,128

d) 82 X 107 = (80 + 2) X (100 + 7)
= (80 X 100) + (80 X 7) + (2 X 100) + (2 X 7)
= 8,000 + 560 + 200 + 14 = 8,774



Estimating Products

Ex. **Estimate the product of the multiplication, then find the actual product.**

ⓐ 53 X 67

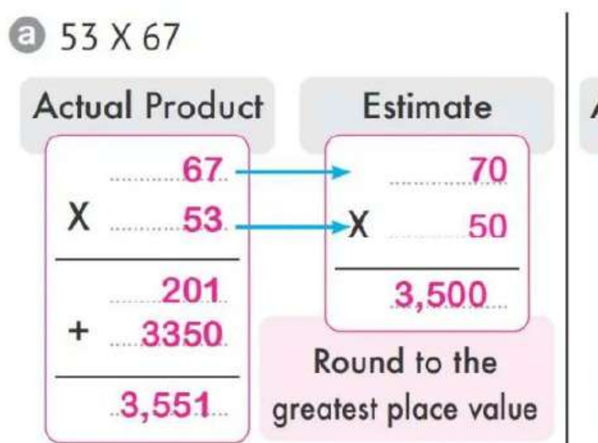
Actual Product	Estimate
67	→ 70
X 53	→ X 50
201	3,500
+ 3,350	Round to the greatest place value
3,551	

ⓑ 39 X 174

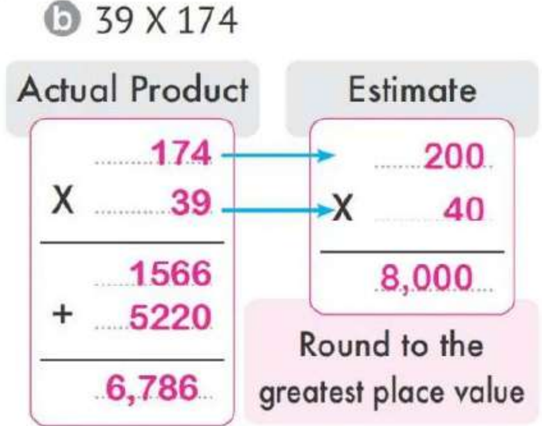
Actual Product	Estimate
174	→ 200
X 39	→ X 40
1,566	8,000
+ 5,220	Round to the greatest place value
6,786	

5 **Estimate the product of the multiplication, then find the actual product:**

ⓐ 53 X 67



ⓑ 39 X 174



6 **Answer the following:**

ⓐ Mona has a restaurant in Al-Quesyr. In February, Mona sold **402** kebabs. In March, she sold **753** kebabs. She makes each kebab with **83** grams of meat. How many grams of meat did she use in February and March?

753 + 402 = 1,155 kebabs,

1,155 X 83 = 95,865 g

b Mona's son, Wael, makes baklava to sell at his family's restaurant. His recipe calls for **170** grams each of pistachios, walnuts, and hazelnuts. In order to make enough for the customers, he needs to multiply his recipe by **18**. How many total grams of nuts will he need?

170 X 3 X 18 = 9,180 g

c For Wael's baklava syrup, he needs **250** milliliters of honey, **15** mL of orange extract, and **30** mL of lemon juice per recipe. How many total milliliters of liquid ingredients will he need for the syrup if he needs to make **18** batches?

250 + 15 + 30 = 295 mL

295 X 18 = 5,310 mL



10

1 Use the area model to find the product of 23 x 65

a 627 X 43 (Use are model)

	600	20	7
40	24,000	800	280
3	1,800	60	21

24,000 + 800 + 280 + 1,800 + 60 + 21 = 26,961

b 33 X 256 (Use standard algorithm)

```
    256
X    33
  768
+ 7,680
  8,448
```

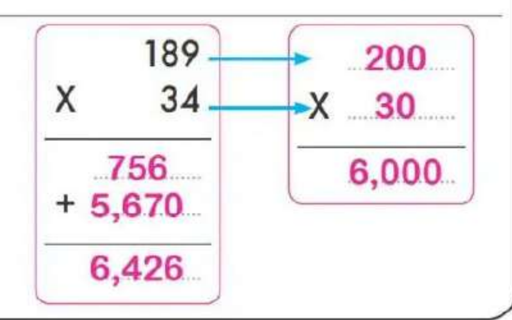
c 75 X 248 (Use Distributive Property)

(70 + 5) X (200 + 40 + 8)

= (70 X 200) + (70 X 40) + (70 X 8) + (5 X 200) + (5 X 40) + (5 X 8)

= 14,000 + 2,800 + 560 + 1,000 + 200 + 40 = 18,600

2 Estimate the product of 89 x 42 using rounding to the greatest value.



Theme 2

Mathematical Operations and Algebraic Thinking

DIVIDE: 29 ÷ 3

MULTIPLY: 9 X 3

SUBTRACT: 29 − 27

DROP THE DIGIT: 1

	29
3	891
	−6
	29
	−27
	21



Theme Units:

Unit 4 Division with Whole Numbers

Concept 4.1: Models for Division

Concept 4.2: Dividing by 2-Digit Divisors

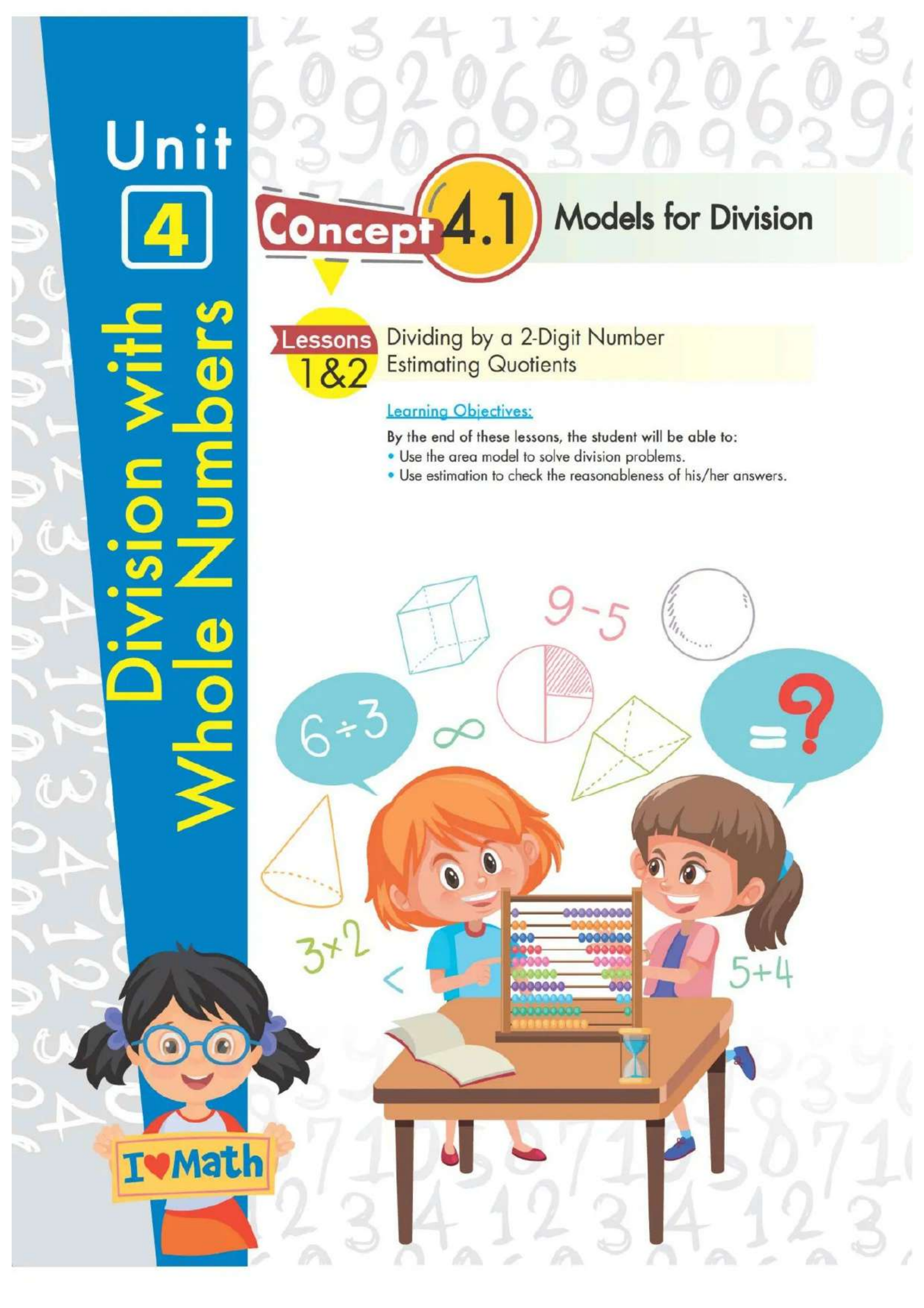
Unit 5 Multiplication and Division with Decimals

Concept 5.1: Multiplying Decimals

Concept 5.2: Dividing Decimals 2

Unit 6 Numerical Expressions and Patterns

Concept 6.1: Evaluating Numerical Expressions and Patterns



Unit 4

Division with Whole Numbers

Concept 4.1 Models for Division

Lessons 1&2

Dividing by a 2-Digit Number
Estimating Quotients

Learning Objectives:

By the end of these lessons, the student will be able to:

- Use the area model to solve division problems.
- Use estimation to check the reasonableness of his/her answers.



Dividing by a 2-Digit Number
Estimating Quotients

Remember

39 ÷ 9 = 4 (R 3)

Dividend — Divisor — Quotient — Remainder

Dividing by a 1-Digit Number

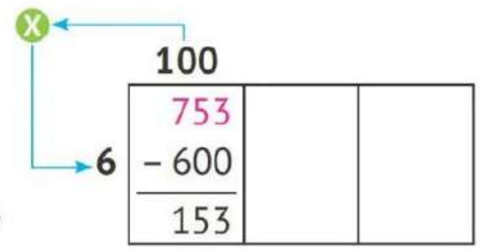
Using the Area Model to Divide

Ex. Divide: 753 ÷ 6

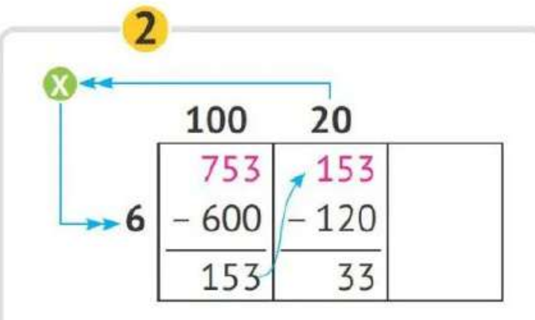
1

Draw a rectangle and write the divisor (6) on the left side of the rectangle.

- We look for a multiple of 6, close to 753.
- We find that 600 is a multiple of 6; because 600 = 6 X 100.
- We write 100 over one part of the rectangle, and we write 753 − 600 = 153 inside it.

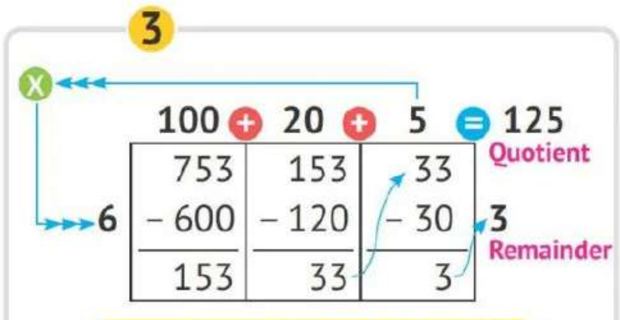


2



- We repeat the same steps with the rest of the number

3

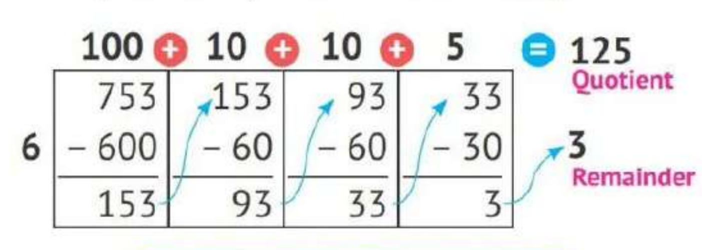


753 ÷ 6 = 125 (R 3)

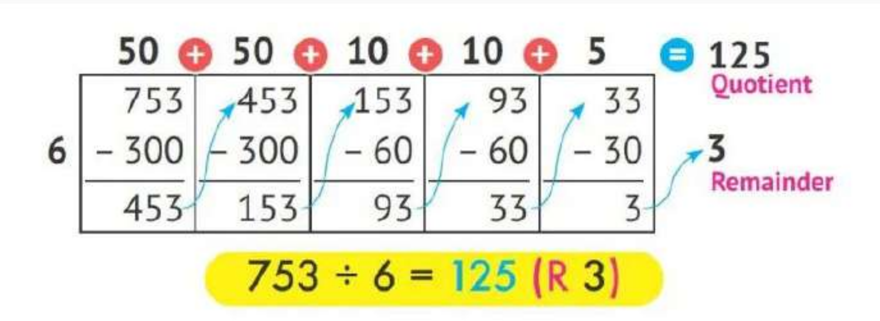
- **To find the quotient**, we add the numbers above the rectangle:

100 + 20 + 5 = 125

Note that There is more than one way to use the area model to solve division problems, as in the following:



$753 \div 6 = 125$ (R 3)



$753 \div 6 = 125$ (R 3)

1 Divide using the area model:

a $76 \div 5$

	10	5
5	76 − 50 = 26	26 − 25 = 1

15 (R1)

b $627 \div 9$

	60	9
9	627 − 540 = 87	87 − 81 = 6

69 (R6)

c $3,256 \div 8$

	400	7
8	3,256 − 3,200 = 56	56 − 56 = 00

407

d $6,820 \div 5$

	1,000	300	60	4
5	6,820 − 5,000 = 1,820	1,820 − 1,500 = 320	320 − 300 = 20	20 − 20 = 00

1,364

Learn

Dividing by a Two-Digit Number Using the Area Model

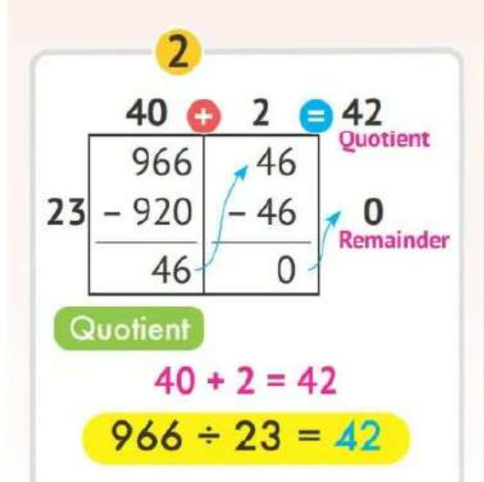
Ex. Divide: 986 ÷ 23



We follow the same steps for dividing by a one-digit number:

- We look for a multiple of 23, close to the dividend of 966.
- We find that 40 X 23 = 920.
- We write 40 over one part of the rectangle, and we write 966 − 920 = 46 inside it.

	40 +	
23	966 − 920 46	46



Another Solution

	10 +	10 +	10 +	10 +	2 = 125 Quotient
23	966 − 230 736	736 − 230 506	506 − 230 276	276 − 230 46	46 − 46 0

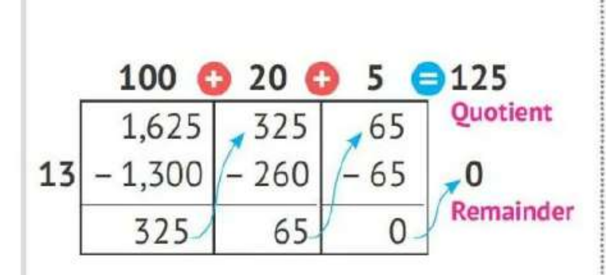
0 Remainder

Quotient

10 + 10 + 10 + 10 + 2 = 42

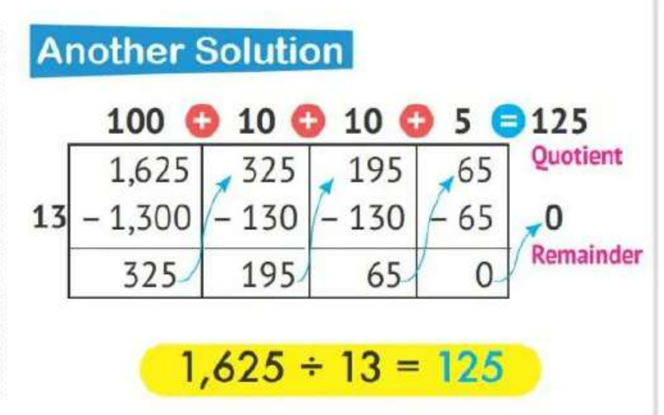
966 ÷ 23 = 42

Ex. Divide: 1,625 ÷ 13



1,625 ÷ 13 = 125

Another Solution



Theme 2

Ex. Divide: 10,454 ÷ 24

	400	+ 30	+ 5 = 435
24	10,454	854	134
	− 9,600	− 720	− 120
	854	134	14

10,454 ÷ 24 = 435 (R 14)

Another Solution

	100	+ 100	+ 100	+ 100	+ 10	+ 10	+ 10	+ 5 = 435
24	10,454	8,054	5,654	3,254	854	614	374	134
	− 2,400	− 2,400	− 2,400	− 2,400	− 240	− 240	− 240	− 120
	8,054	5,654	3,254	854	614	374	134	14

10,454 ÷ 24 = 435 (R 14)

2 Divide using the area model:

a) 998 ÷ 19 = 52 (R10)

	50	2
19	998	48
	− 950	− 38
	48	10

b) 899 ÷ 37 = 24 (R11)

	20	4
37	899	159
	− 740	− 148
	159	11

c) 4,428 ÷ 36 = 123

	100	20	20
36	4,423	828	108
	− 3,600	− 720	− 108
	828	108	000

d) 7,946 ÷ 63 = 126 (R8)

	100	20	6
63	7,946	1,646	386
	− 6,300	−1,260	− 378
	1,646	386	008

e) 17,082 ÷ 73 = 234

	200	30	4
73	17,082	2,482	292
	−14,600	− 2,190	− 292
	2,482	292	000

3 Complete the **area model**, then find the **quotient**:

ⓐ 7,776 ÷ 32

	200	40	3
	7,776	1,376	96
32	− 6,400	− 1,280	− 96
	1,376	96	14

200 + 40 + 3 = 243

ⓑ 9,234 ÷ 81

	100	10	2	2
	9,234	1,134	324	162
81	− 8,100	−810	−162	−162
	1,134	324	162	000

100 + 10 + 2 + 2 = 144

Learn

Estimating Quotients

- To estimate the quotient, round the dividend and the divisor to the greatest place value the divide.

Ex. Divide: 1,632 ÷ 48

Actual Quotient

	30	4
	1,632	192
48	− 1,440	− 192
	192	0

1,632 ÷ 48 = 34

Estimate

1,632 ÷ 48

↓ ↓

2,000 ÷ 50 = 40

The answer is reasonable

Ex. Divide: 6,552 ÷ 28

Actual Quotient

	200	30	4
	6,552	952	112
28	− 5,600	− 840	− 112
	952	112	0

6,552 ÷ 28 = 234

Estimate

6,552 ÷ 28

↓ ↓

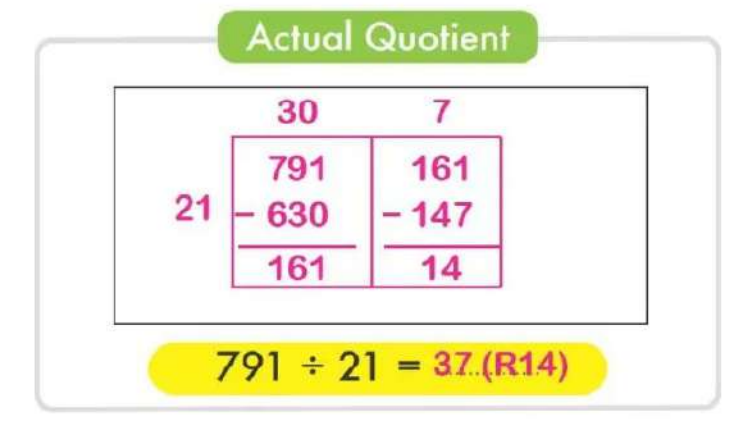
6,000 ÷ 30 = 200

The answer is reasonable

4 **Estimate the quotient, then find the actual result.**

ⓐ 791 ÷ 21

Actual Quotient



791 ÷ 21 = 37 (R14)

Extimate

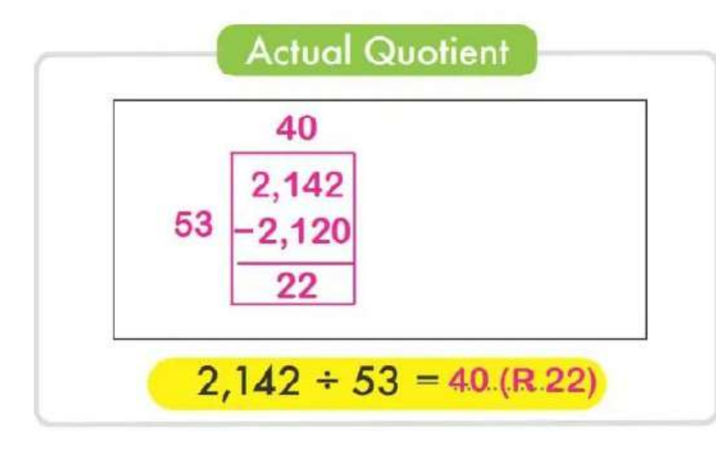
798 ÷ 21

800 ÷ 20 = 40

The answer is reasonable

ⓑ 2,142 ÷ 53

Actual Quotient



2,142 ÷ 53 = 40 (R 22)

Estimate

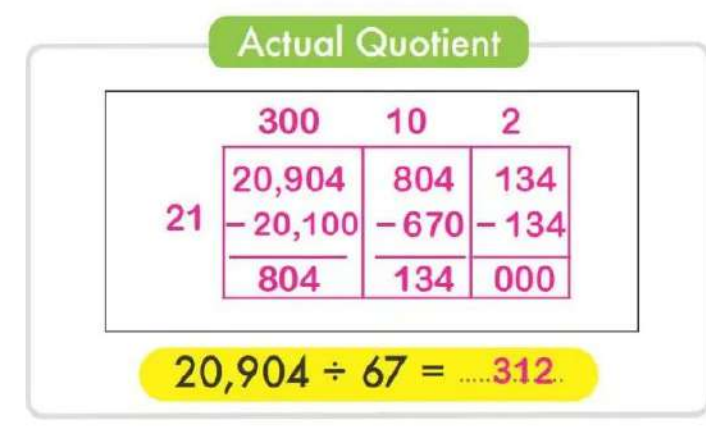
2,142 ÷ 53

2,000 ÷ 50 = 40

The answer is reasonable

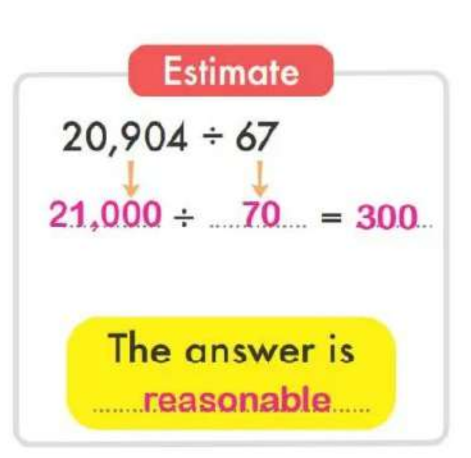
ⓒ 20,904 ÷ 67

Actual Quotient



20,904 ÷ 67 = 312

Estimate





10

1 Choose the correct answer:

a) In 38 ÷ 9 = 4 r 2, the divisor is ...9... . (9 or 38 or 2 or 4)

b) In 23 ÷ 7 = 3 r 2, the quotient is ...3... . (2 or 7 or 23 or 3)

c) In 55 ÷ 6 = 9 r 1, the dividend is ...55... . (9 or 6 or 55 or 1)

d) In 65 ÷ 7 = 9 r 2, the remainder is ...2... . (65 or 7 or 9 or 2)

2 Complete the following operation:

...673... ÷ ...5...

= ...134... R ...3...

	...100...	...30...	...4...
...5...	673	173	23
	− 500	− 150	− 20
	...173...	...23...	...3...

3 Estimate the quotient using rounding to the greatest value:

4,428 ÷ 41

...4,000... ÷ ...40... = ...100...





Division with Whole Numbers



Concept 4.2 Dividing by 2-Digit Divisors

Lessons 3 – 5

Using the Division Algorithm
The Relation Between Division and Multiplication
Multistep Story Problems

Learning Objectives:

By the end of these lessons, the student will be able to:

- Use the standard algorithm to divide by a 2-digit divisor.
- Use multiplication to check answers to division problems.
- Solve multistep story problems involving whole numbers and the four operations.







Using the Division Algorithm
The Relation Between Division and Multiplication
Multistep Story Problems



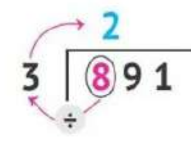


Using the Standard Algorithm to Divide

Ex. Divide: 891 ÷ 3

The steps of the division process:

First Step: Divide	Second Step: Multiply	Third Step: Subtract	Fourth Step: Drop the next digit
3 ⟌ 891, quotient 2 (8 ÷ 3)	3 ⟌ 891, quotient 2; 2 X 3 = 6	3 ⟌ 891, quotient 2; 8 − 6 = 2	3 ⟌ 891, quotient 2; 8 − 6 = 2, drop 9 → 29



We repeat the same steps

Divide: 29 ÷ 3	Divide: 21 ÷ 3
Multiply: 9 X 3	Multiply: 7 X 3
Subtract: 29 − 27	Subtract: 21 − 21
Drop the digit: 1	

```
     29              297
  3 |891          3 |891
   - 6             - 6
     29              29
   - 27            - 27
     21              21
                   - 21
                      0
```

So, 891 ÷ 3 = 297

Note that Multiplication and division are **inverse operations**, so we can use multiplication to check the result of division.

From the previous example:

297 X 3 = 891, where the product of multiplication is equal to the dividend, **so** the quotient is true.

Ex. Divide: 859 ÷ 8

(Using the standard division algorithm)

- **Note that:** When dividing 5 ÷ 8, division is **not possible** because 5 < 8.

So: We put **0** over the digit **5**, and we divide **5** and **9** together: 59 ÷ 8.

Thus: 859 ÷ 8 = 107 (R 3)

Check: (107 X 8) + 3 = 859

8 ÷ 8 = 1 | 5 ÷ 8 Not possible | 56 ÷ 8 = 7

```
      1 0 7
  8 | 8 5 9
8 X 100 → − 8 0 0
        5 9
8 X 7 → − 5 6
          3
```

1 Divide using the standard division algorithm:

ⓐ 785 ÷ 5 = 157

```
   1 5 7
5 | 7 8 5
  − 5 0 0
    2 8 5
  − 2 5 0
    0 3 5
  −   3 5
      0 0
```

ⓑ 2,598 ÷ 4 = 649 (R2)

```
     6 4 9
4 | 2,5 9 8
  − 2,4 0 0
      1 9 8
  −   1 6 0
        3 8
  −     3 6
          2
```

ⓒ 3,565 ÷ 3 = 1,188 (R1)

```
    1,1 8 8
3 | 3,5 6 5
  − 3,0 0 0
    0 5 6 5
  −   3 0 0
      2 6 5
  −   2 4 0
        2 5
  −     2 4
          1
```

ⓓ 9,628 ÷ 8 = 1,203 (R4)

```
    1,2 0 3
8 | 9,6 2 8
  − 8,0 0 0
    1,6 2 8
  − 1,6 0 0
        2 8
  −     2 4
          4
```

Learn

Dividing by a Two-Digit Number Using the Standard Division Algorithm

Create a **multiplication table** for the divisor to help you:

46 X 1 = 46

46 X 2 = 92

46 X 3 = 138

46 X 4 = 184

46 X 5 = 230

46 X 7 = 322

1 Starting from the left, we find that:

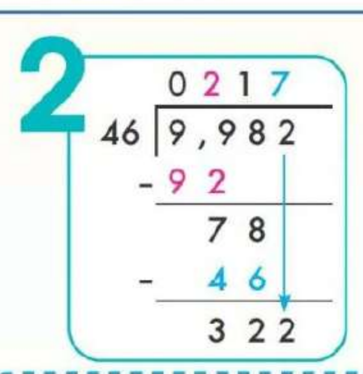
9 < 46, so we divide **99 ÷ 64.**

With the help of the previous table, we find that:

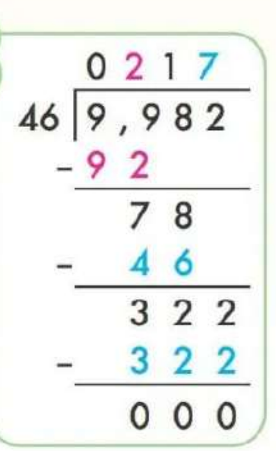
The nearest multiple of 46 to **99** is **46 x 2 = 92.**

```
     0 2 1 7
46 | 9 , 9 8 2
   - 9 2
     7 8
```

2



3



So: 9,982 ÷ 46 = 217

Check: 217 X 46 = 9,982

Ex.

ⓐ Divide 1,863 ÷ 23 = 81

```
       8 1
23 | 1 , 8 6 3
   - 1   8 4
         2 3
       - 2 3
         0 0
```

Draft

23 X 1 = 23

23 X 2 = 46

23 X 3 = 69

23 X 4 = 92

23 X 5 = 115

23 X 6 = 138

23 X 7 = 161

23 X 8 = 184

23 X 9 = 207

ⓑ Divide 7,038 ÷ 46 = 153

```
        1 5 3
46 | 7 , 0 3 8
   - 4   6
     2   4 3
   - 2   3 0
         1 3 8
       - 1 3 8
         0 0 0
```

Draft

46 X 1 = 46

46 X 2 = 92

46 X 3 = 138

46 X 4 = 184

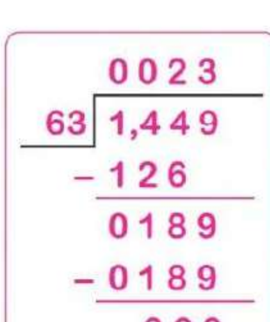
46 X 5 = 230

46 X 6 = 276

Theme 2

2 Divide using the standard division algorithm:

ⓐ 1,449 ÷ 63 = 23



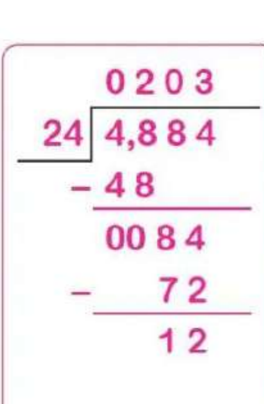
Draft

ⓑ 44,032 ÷ 42 = 1,048 (R16)

0 1,0 4 8
42 | 4 4,0 3 2
– 4 2
2 0 3
– 1 6 8
3 5 2
– 3 3 6
1 6

Draft

ⓒ 4,884 ÷ 24 = 203 (R12)



Draft

ⓓ 7,834 ÷ 37 = 211 (R27)

0 2 1 1
37 | 7,8 3 4
– 7 4
4 3
– 3 7
0 6 4
– 3 7
2 7

Draft

3 Answer the following:

ⓐ In her cafe, Rana sells cakes that were baked in a bakery. Rana received an order to deliver **350** cakes. She put the cakes in bags, **12** cakes each. Find the number of bags.

350 ÷ 12 = 29 (R2) , Number of bags = 30

Draft

0 2 9
12 | 3 5 0
– 2 4
1 1 0
– 1 0 8
2



b Computer Depot sold **762** reams of paper. Paper Palace sold **3 times** as much paper as Computer Depot and **143** reams more than Office Supply Central. How many reams of paper were sold by all three stores combined?

Paper Palace = 3 X 762 = 2,286 reams

Office Supply = 2,286 – 143 = 2,143 reams

Sum = 762 + 2,286 + 2,143 = 5,191 reams

Draft

c Hazem has **5** boxes of red pens, each with **24** pens, and **4** boxes of blue pens, each with **12** pens. Hazem wants to distribute the pens evenly among **8** of his friends.

How many pencils will each friend get?

Red = 5 X 24 = 120 pens

blue = 4 X 12 = 48 pens

Each friend will get = (120 + 48) ÷ 8

= 168 ÷ 8 = 21 pens

Draft

d The school library received **55** boxes, each containing **72** books.

These books will be distributed in **12** cupboards.

How many books will be in each cupboard?

72 X 55 = 3,960 books

3,960 ÷ 12 = 330 books

Draft



10

1 Complete the following division operations:

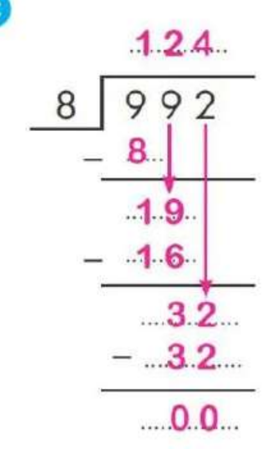
a

$$\begin{array}{r} 164 \\ 4\overline{)656} \\ -4 \\ \hline 25 \\ -24 \\ \hline 16 \\ -16 \\ \hline 00 \end{array}$$

b

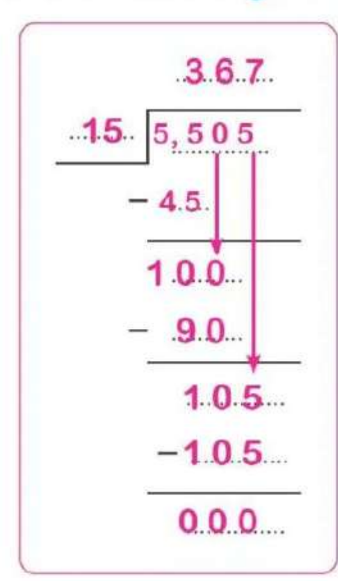
$$\begin{array}{r} 125 \\ 5\overline{)625} \\ -5 \\ \hline 12 \\ -10 \\ \hline 25 \\ -25 \\ \hline 00 \end{array}$$

c



2 Divide using the standard division algorithm:

5,505 ÷ 15



15 X 1 = 15
15 X 2 = 30
15 X 3 = 45
15 X 4 = 60
15 X 5 = 75
15 X 6 = 90
15 X 7 = 105
15 X 8 = 120
15 X 9 = 135





Multiplying Decimals



Multiplying by Powers of Ten
Multiplying Decimals by Whole Numbers

Learning Objectives:

By the end of these lessons, the student will be able to:

- Explain patterns when multiplying whole numbers by powers of ten.
- Multiply a decimal by a whole number.



Multiplying Tenths by Tenths
Multiplying Using the Area of Rectangle Model

Learning Objectives:

By the end of these lessons, the student will be able to:

- Use models to represent multiplying decimals.
- Explain patterns when multiplying Tenths by Tenths.
- Estimate products of decimals.
- Use the area model to multiply decimals.

Lessons 5&6

Multiplying Decimals through the Hundredths Place
Multiplying Decimals through the Thousandths Place

Learning Objectives:

By the end of these lessons, the student will be able to:

- Use the standard algorithm to multiply decimals through the Hundredths place.
- Use the standard algorithm to multiply decimals through the Thousandths place.
- Use estimation to check the reasonableness of his/her answers.

Lessons 7–9

Decimals and the Metric System
Measurement, Decimals, and Powers of Ten
Solving Multistep Story Problems

Learning Objectives:

By the end of these lessons, the student will be able to:

- Explain relationships between the metric system and decimals.
- Use decimals to represent equivalent measurements.
- Relate converting measurements in the metric system to multiplying by powers of ten.
- Solve multistep story problems involving addition, subtraction, and multiplication of decimals.

Theme 2



Multiplying by Powers of Ten
Multiplying Decimals by Whole Numbers

Important Notes:

- You can add **zeros** to the left of the last non-zero digit, or add a **decimal point** to the whole number, or add **zeros** to the right of the decimal point without changing the value of the number.



0008 = 008 = 08 = 8 = 8.0 = 8.00 = 8.000

Learn

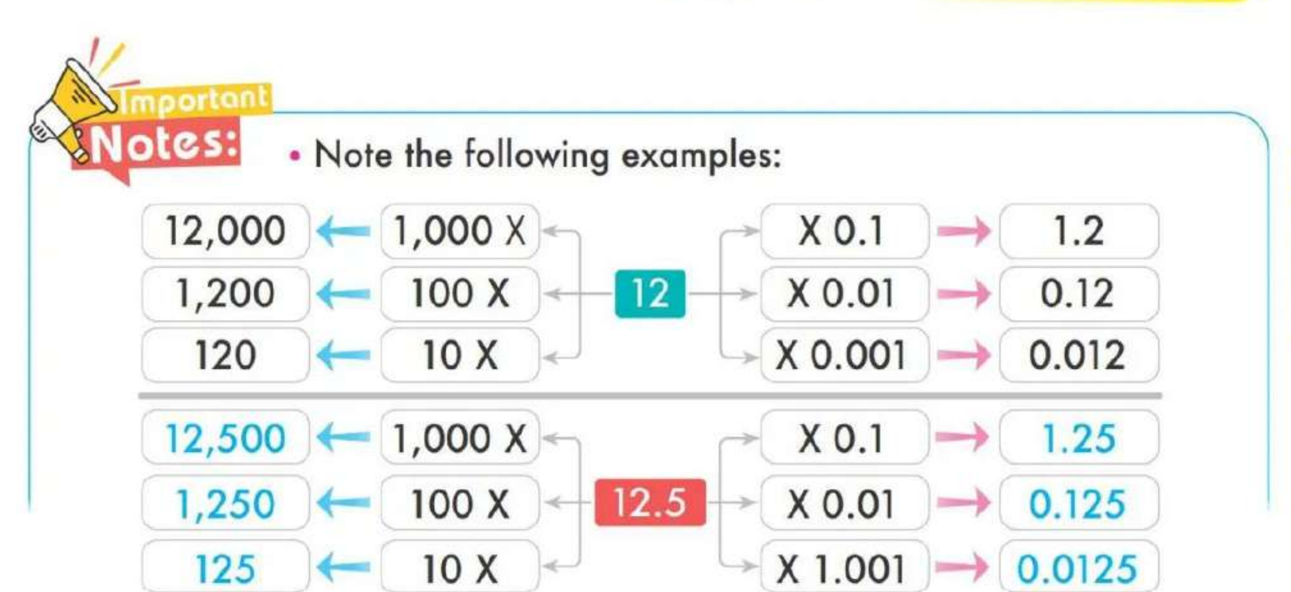
Multiplying by (10, 100, 1,000,...)

8.0 × 10 = 80	When multiplying by 10, 100, or 1,000, move the decimal point to the **right** with the same number of **zeros**.	3.45 × 10 = 34.5
8.00 × 100 = 800		3.45 × 100 = 345
8.000 × 1,000 = 8,000		3.45 × 1,000 = 3,450

Multiplying by (0.1, 0.01, 0.001,...)

8. × 0.1 = 0.8	When multiplying by 0.1, 0.01, or 0.001, move the decimal point to the **left** by the same number of **decimal parts**.	21.7 × 0.1 = 2.17
8. × 0.01 = 0.08		21.7 × 0.01 = 0.217
8. × 0.001 = 0.008		21.7 × 0.001 = 0.0217

The place of the whole number cannot be left blank, a "0" is added to save its place.



1 Complete the following patterns:

ⓐ	ⓑ	ⓒ
9 X 10 = 90	1.2 X 10 = 12	23.5 X 10 = 235
9 X 100 = 900	1.2 X 100 = 120	23.5 X 100 = 2350
9 X 1,000 = 9,000	1.2 X 1,000 = 1,200	23.5 X 1,000 = 23500
9 X 0.1 = 0.9	1.2 X 0.1 = 0.12	23.5 X 0.1 = 2.35
9 X 0.01 = 0.09	1.2 X 0.01 = 0.012	23.5 X 0.01 = 0.235
9 X 0.001 = 0.009	1.2 X 0.001 = 0.0012	23.5 X 0.001 = 0.0235

2 Complete the following:

ⓐ 4.2 X 10 = 42 ⓑ 360 X 0.1 = 36 ⓒ 7.4 X 0.01 = 0.074

ⓓ 1.245 X 100 = 124.5 ⓔ 602.1 X 0.01 = 6.021 ⓕ 14.14 X 0.1 = 1.414

ⓖ 0.2 X 100 = 20 ⓗ 1.3 X 0.1 = 0.13 ⓘ 12 X 0.001 = 0.012

3 Complete the following table:

X	10	100	1,000	1	0.1	0.01	0.001
3	30	300	3,000	3	0.3	0.03	0.003
30	300	3,000	30,000	30	3	0.3	0.03
0.3	3	30	300	0.3	0.03	0.003	0.0003

Learn — Multiplying Decimals by Whole Numbers

Note the following pattern:

5 X	0.3	=	1.5
5 X	3 Tenths	=	15 Tenths
5 X	$\frac{5}{10}$	=	$\frac{15}{10}$

4 X	0.07	=	0.28
5 X	7 Hundredths	=	28 Hundredths
4 X	$\frac{7}{100}$	=	$\frac{28}{100}$

9 X	0.15	=	1.35
9 X	15 Hundredths	=	135 Hundredths
9 X	$\frac{15}{100}$	=	$\frac{135}{100}$

13 X	0.218	=	2.834
13 X	218 Thousandths	=	2,834 Thousandths
13 X	$\frac{218}{1,000}$	=	$\frac{2,834}{1,000}$

Generally:

- When multiplying a whole number by a decimal, we do the multiplication without the decimal point and then put the decimal point while maintaining the same number of decimal parts.

23 X 9 = 207

23 X 0.9 = 20.7	2.3 X9 = 20.7
23 X 0.09 = 2.07	0.23 X 9 = 2.07
23 X 0.009 = 0.207	0.023 X 9 = 0.207

4 **Find the product of (34 X 23), then complete:**

a) 3.4 X 23 = 78.2

b) 0.34 X 23 = 7.82

c) 34 X 2.3 = 78.2

d) 34 X 0.23 = 7.82

e) 0.034 X 23 = 0.782

f) 34 X 0.023 = 0.782

```
   34
X  23
-----
  102
+ 680
-----
  782
```

5 Find the product of:

a) 0.2 X 8 = 1.6
b) 0.07 X 8 = 0.56
c) 9 X 0.009 = 0.081
d) 7 X 1.2 = 8.4
e) 6 X 0.39 = 2.34
f) 9.07 X 8 = 72.56
g) 0.142 X 5 = 0.71
h) 0.025 X 8 = 0.2
i) 0.125 X 12 = 1.5



10

1 Choose the correct answer:

a) 32.7 X 10 = 327 (3.27 or 0.327 or 32.70 or 327)
b) 850 X 0.01 = 8.5 (8.5 or 85.0 or 0.85 or 850)
c) 0.7 X 0.04 = 0.028 (0.28 or 2.8 or 0.028 or 280)
d) 6.279 X 10 = 62.79 (0.6289 or 62.79 or 6.279 or 627.9)

2 Find the product of:

a) 0.07 X 5 = 0.35
b) 0.2 X 6 = 1.2
c) 9 X 0.009 = 0.081

3 Given that, 362 X 17 = 6154. Put the decimal point in the suitable place.

a) 3.62 X 17 = 61.54
b) 36.2 X 17 = 615.4
c) 0.362 X 17 = 6.154



Multiplying Tenths by Tenths
Multiplying Using the Area of Rectangle Model

Learn

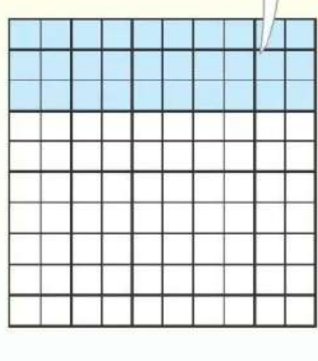
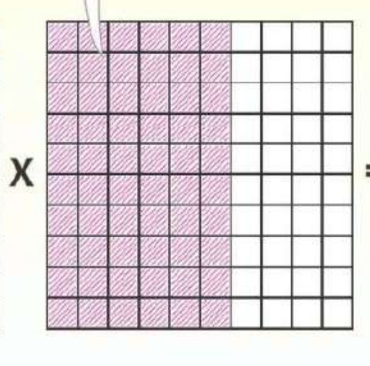
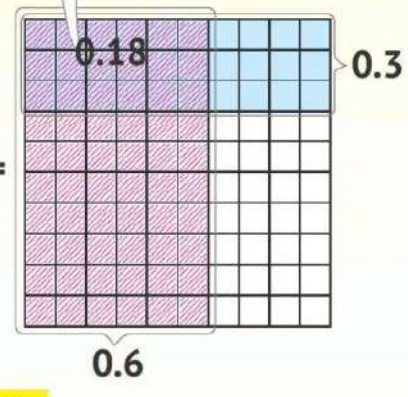
Multiplying Decimals with Arrays (The Base 10 Grids)

To multiply: 0.3 x 0.6 (using the Base 10 grids)

Color a horizontal part representing 0.3 (30 squares).

Color a vertical part representing 0.6 (60 squares) in a different color.

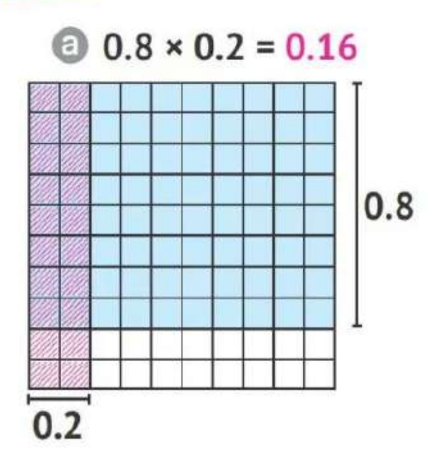
The squares with the two colors overlapping represent the product 0.18 (18 squares).


x

=


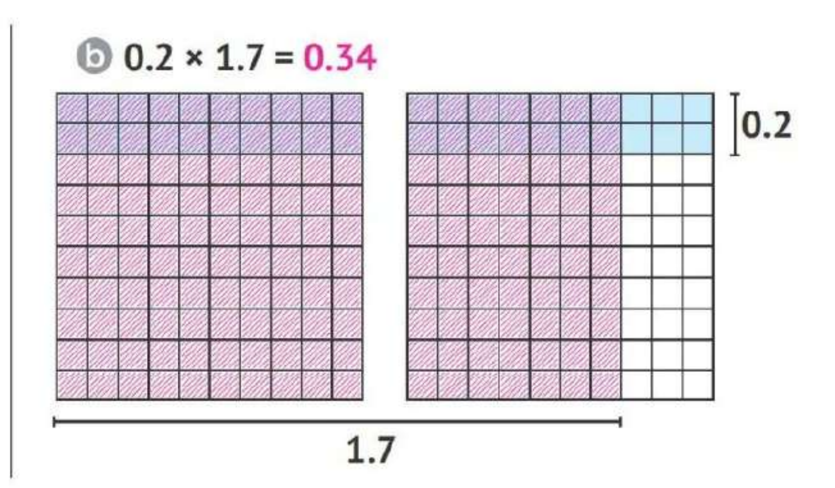
So, 0.3 X 0.6 = 0.18

Ex.

ⓐ 0.8 × 0.2 = 0.16

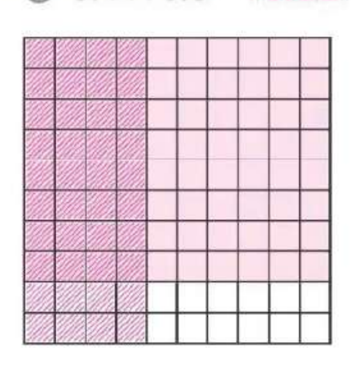


ⓑ 0.2 × 1.7 = 0.34

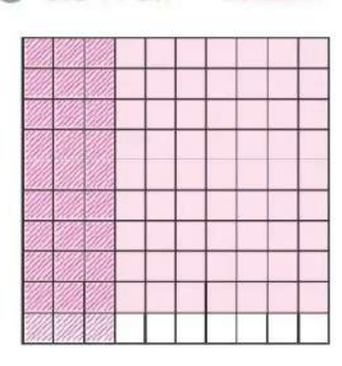


1 **Use the Base 10 grids to find the product:**

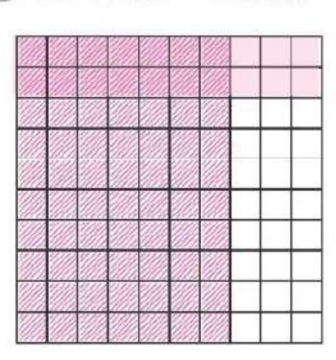
ⓐ 0.4 X 0.8 = 0.32



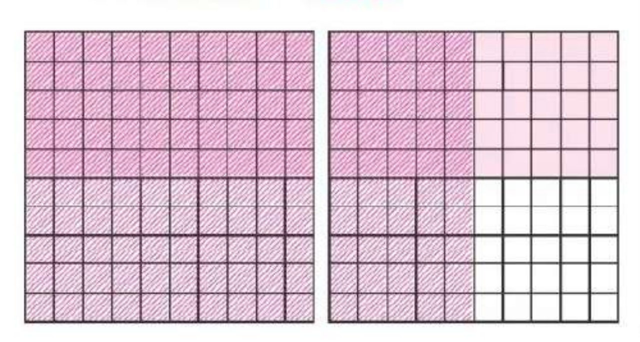
ⓑ 0.3 X 0.9 = 0.27



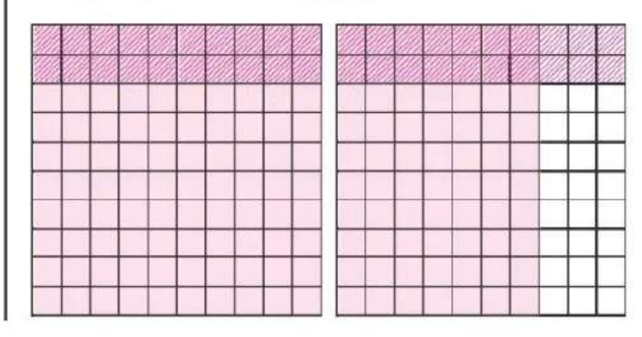
ⓒ 0.7 X 0.2 = 0.14



ⓓ 1.5 X 0.5 = 0.75



ⓔ 0.2 X 1.7 = 0.34



Learn

Using the Area Model to Multiply Decimals

Ex. **Multiply using the area model:**

ⓐ **3.24 X 5.2**

3.24 X 5.2 = 15 + 1 + 0.2 + 0.6

+ 0.04 + 0.008 = 16.848

	3	0.2	0.04
5	15	1	0.2
0.2	0.6	0.04	0.008

ⓑ **3.8 × 0.27**

3.8 X 0.27 = 0.6 + 0.16 + 0.21 + 0.056

= 1.026

	3	0.8
0.2	0.6	0.16
0.07	0.21	0.056

Theme 2

2 Multiply using the area model:

ⓐ 0.8 X 2.7

	2	0.7
0.8	1.6	0.56

2.16

ⓑ 4.2 X 3.6

	3	0.6
4	12	2.4
0.2	0.6	0.12

15.12

ⓒ 7.4 X 27.3

	20	7	0.3
7	140	49	2.1
0.4	8	2.8	0.12

202.02

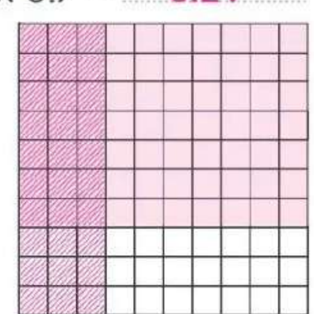


Quiz

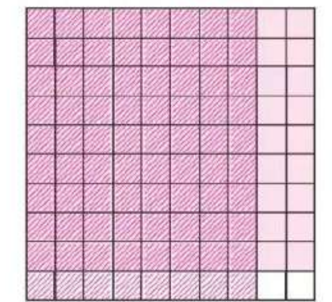
/ 10

1 Use the Base 10 grids to find the product:

ⓐ 0.3 X 0.7 = 0.21

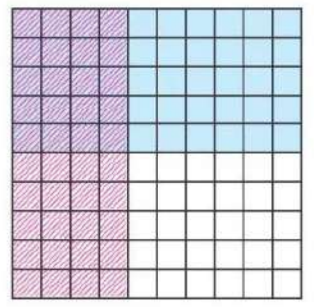


ⓑ 0.8 X 0.9 = 0.72

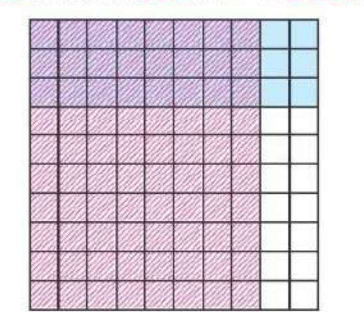


2 Complete the operation:

ⓐ 0.4 X 0.5 = 0.2



ⓑ 0.3 X 0.8 = 0.24



3 Multiply using the area model:

3.27 X 1.5 = 4.905

	3	0.2	0.07
1	3	0.2	0.07
0.5	1.5	0.1	0.035



Multiplying Decimals through the Hundredths Place
Multiplying Decimals through the Thousandths Place

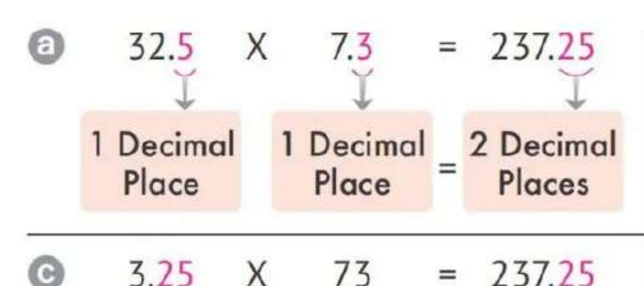
Learn

Using the Standard Algorithm to Multiply Decimals

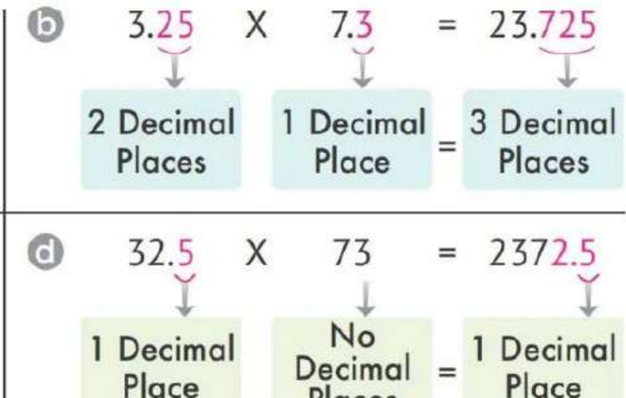
Ex. **Multiply:** ⓐ 32.5 X 7.3 ⓑ 3.25 X 7.3 ⓒ 3.25 X 73 ⓓ 32.5 X 73

- Multiply the **two numbers** without the decimals.
- Put the decimal point in the result from the **right**, after the number of digits equal to the sum of the decimal places in the two numbers before the multiplication.

```
   13
    1
  3 2 5
X    73
-------
    975
+ 22.750
-------
 23.725
```



ⓐ 32.5 X 7.3 = 237.25
1 Decimal Place + 1 Decimal Place = 2 Decimal Places



ⓑ 3.25 X 7.3 = 23.725
2 Decimal Places + 1 Decimal Place = 3 Decimal Places

ⓒ 3.25 X 73 = 237.25
2 Decimal Places + No Decimal Places = 2 Decimal Places

ⓓ 32.5 X 73 = 2372.5
1 Decimal Place + No Decimal Places = 1 Decimal Place



- If the number of digits of the product is **less than** the sum of the number of decimal places, add **zeros** by the amount of increment to the **left** of the resulting number, and then put the decimal point.



0.04 X 0.2 = 0.008
2 Decimal Places + 1 Decimal Place = 3 Decimal Places

4 X 2 = 8, the product of multiplication is one digit, and we need 3 digits, so we add two **zeros** and then put the decimal point.

1 If 24 X 13 = 312, then complete:

a) 2.4 X 13 = 31.2
b) 24 X 1.3 = 31.2
c) 2.4 X 1.3 = 3.12
d) 0.24 X 1.3 = 0.312
e) 2.4 X 0.13 = 0.312
f) 2.4 X 130 = 312
g) 0. 24 X 13 = 3.12
h) 0.24 X 0.13 = 0.0312

2 In each of the following, put a decimal point in the product:

a) 3.6 X 4.1 = 14.76
b) 8.7 X 52 = 452.4
c) 1.25 X 3.7 = 4.625
d) 7.74 X 23 = 178.02
e) 92.3 X 0.08 = 7.384
f) 183 X 0.06 = 10.98
g) 75.63 X 0.14 = 10.5882
h) 2.008 X 42 = 84.336

3 Use the standard algorithm to multiply:

a)
```
   3.5
 X 0.7
 -----
  2.45
```

b)
```
    7.6
  X 3.4
  -----
    304
+ 2.280
  -----
  25.84
```

c)
```
   2.31
  X 1.4
  -----
    924
+ 2.310
  -----
  3.234
```

d)
```
    7.23
  X 0.12
  ------
    1446
+  7.230
  ------
  0.8676
```

Quiz

10

1 Given that, 49 X 35 = 1715. Put the decimal point in the suitable place:

a) 4.9 X 0.35 = 1.715
b) 0.49 X 350 = 171.5
c) 4.9 X 3.5 = 17.15

2 Put the decimal point in the suitable place:

a) 1.7 X 5.9 = 10.03
b) 71.2 X 0.06 = 4.272
c) 55.4 X 8.03 = 444862

3 Find the product:

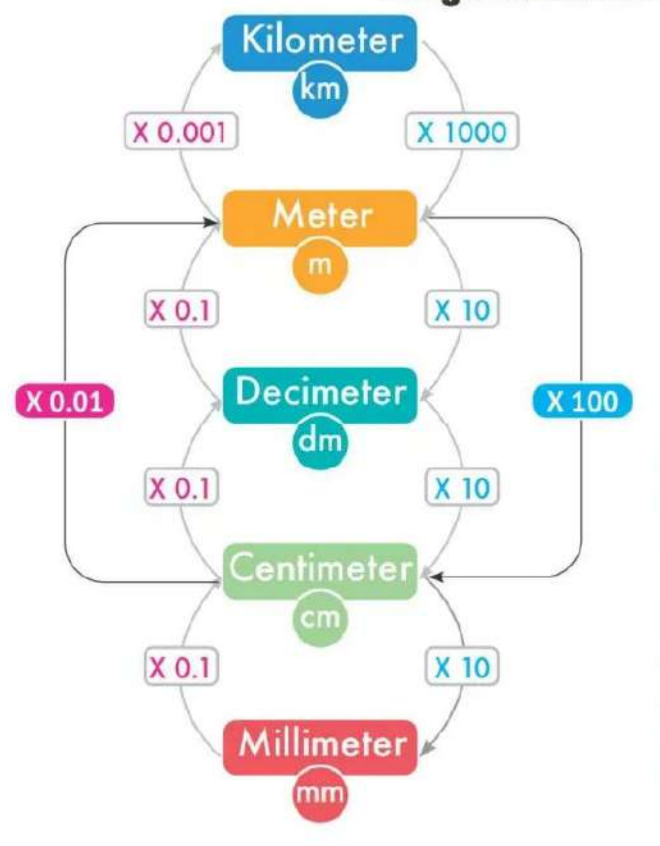
```
    65.2
  X  3.8
  ------
   5.216
+ 19.560
  ------
  247.76
```

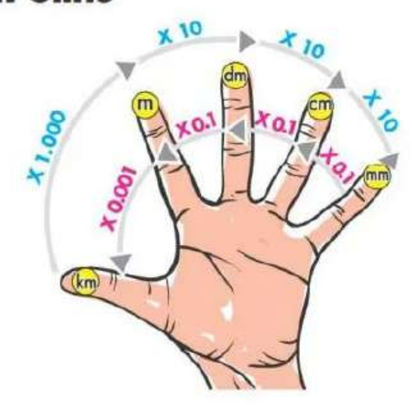


Decimals and the Metric System
Measurement, Decimals, and Powers of Ten
Solving Multistep Story Problems

Remember

Length Measurement Units





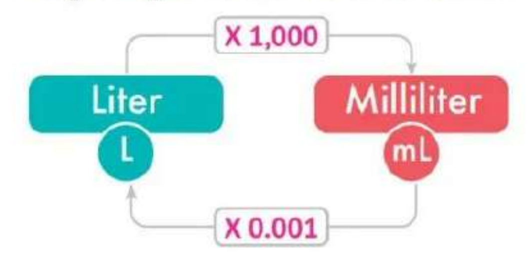
- 1 km = 1 X 1,000 = 1,000 m
- 1 m = 1 X 0.001 = 0.001 km

- 1 m = 1 X 10 = 10 dm
- 1 dm = 1 X 0.1 = 0.01 m

- 1 dm = 1 X 10 = 10 cm
- 1 cm = 1 X 0.1 = 0.01 dm

- 1 cm = 1 X 10 = 10 mm
- 1 mm = 1 X 0.1 = 0.01 cm

Capacity Measurement Units



1 liter = 1 X 1,000 = 1,000 mL

1 mL = 1 X 0.001 = 0.001 liter

Mass Measurement Units



1 kg = 1 X 1,000 = 1,000 g

1 g = 1 X 0.001 = 0.001 kg

1 Complete, as in the examples:

Ex. 10,870 g = 10,870 X 0.001 = 10.870 kg

45.62 m = 45.62 X 100 = 4,562 cm

a 3,465 mL	=	3,465	X	0.001	=	3.465	L
b 245 cm	=	245	X	0.01	=	2.45	m
c 0.7 m	=	0.7	X	100	=	70	cm
d 7.56 dm	=	7.56	X	10	=	75.6	cm
e 25,378 g	=	25,378	X	0.001	=	25.378	kg
f 56.89 L	=	56.89	X	1,000	=	56,890	mL
g 56 m	=	56	X	0.001	=	0.056	km

2 Answer the following:

a Rania is a nurse in a hospital. She is getting wrap bandages from the storage closet for her patients. She needs 1.35 meters of bandages for each of her 4 patients. How many meters does she need?

She needs = 1.35 X 4 = 5.4 m

b Dalia made a liter of sugar cane juice. She drank 320 milliliters. Her father drank 0.25 liters. How much sugar cane juice is remaining? (In litres)

320 + 250 = 570 mL

The remainder = 1,000 – 570 = 430 mL = 0.43 L

c Ehab wants to know how much he has grown this year. In January, he was 138.2 centimeters. By the end of the year, he was 1.5 meters tall. How much did Ehab grow this year? (In centimeters)

Ehab grew = 150 – 138.2 = 11.8 cm

d) Marwan is designing a new circuit board for the computer he is repairing. The old circuit board measured 7.25 centimeters by 36 millimeters. He planned for the new circuit board to be 80 mm by 5.5 cm. What is the difference in area of the circuit boards? (In centimeters)

$3.6 \times 7.25 = 26.1$ cm², $5.5 \times 8 = 44$ cm²

The difference = $44 - 26.1 = 17.9$ cm²



—— / 10

1 Choose the correct answer:

a) 2,575 mL = 2.575 L (2.575 or 25.75 or 257.5 or 0.2575)

b) 648 cm = 6.48 m (0.648 or 64.8 or 6.48 or 6.048)

c) 0.75 m = 75 cm (75 or 7.5 or 0.75 or 0.075)

d) 12.87 kg = 12,870 g (1.287 or 128.7 or 1,287 or 12,870)

2 Complete the following:

a) 48.29 dm = 482.9 cm

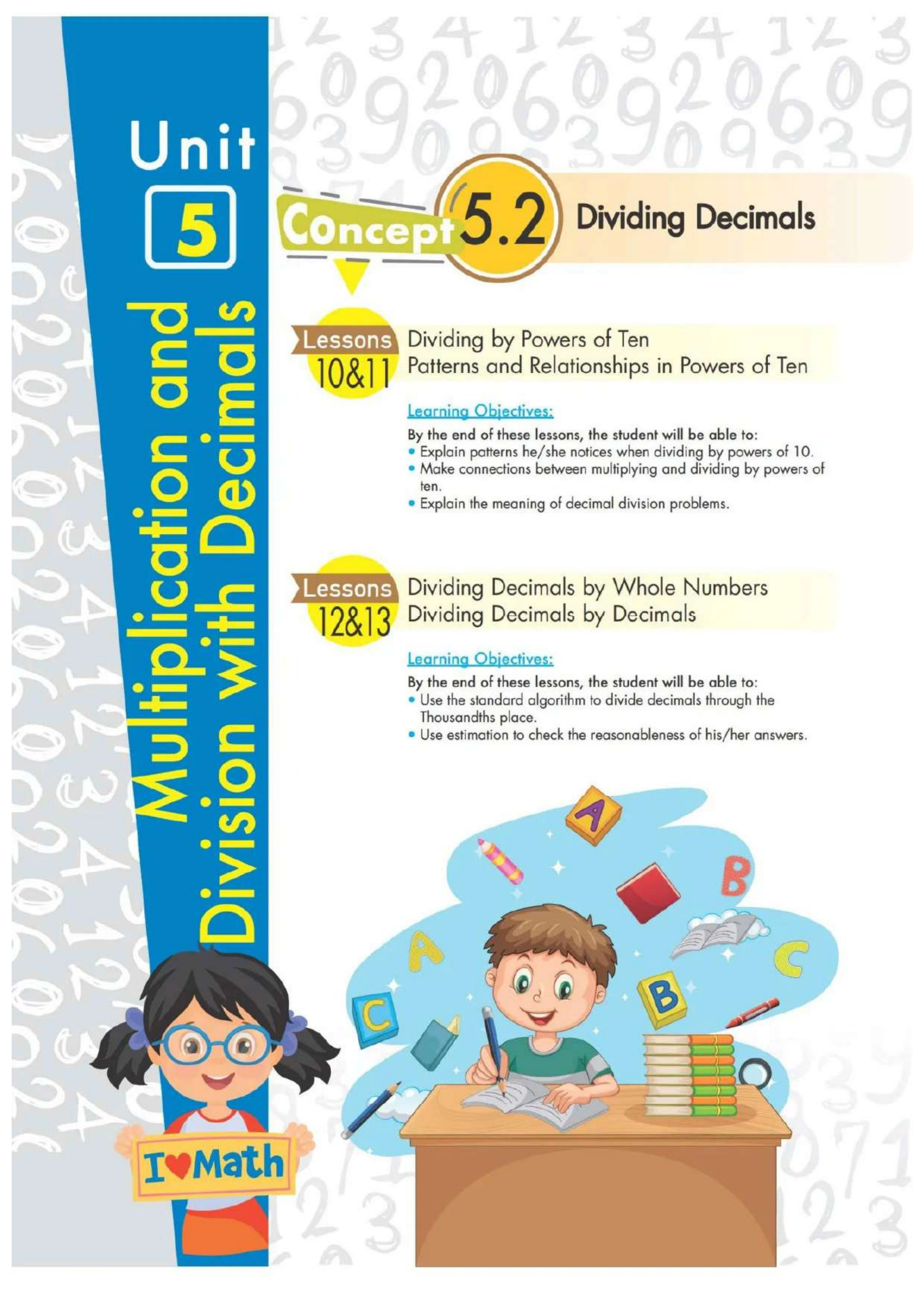
b) 9500 g = 9.5 kg

c) 6.7 L = 6,700 mL

d) 125 m = 0.125 km

3 Find:

3.25 kg + 1750 g = 5 kg = 5,000 g



Unit 5

Multiplication and Division with Decimals

Concept 5.2 Dividing Decimals

Lessons 10&11 Dividing by Powers of Ten / Patterns and Relationships in Powers of Ten

Learning Objectives:

By the end of these lessons, the student will be able to:

- Explain patterns he/she notices when dividing by powers of 10.
- Make connections between multiplying and dividing by powers of ten.
- Explain the meaning of decimal division problems.

Lessons 12&13 Dividing Decimals by Whole Numbers / Dividing Decimals by Decimals

Learning Objectives:

By the end of these lessons, the student will be able to:

- Use the standard algorithm to divide decimals through the Thousandths place.
- Use estimation to check the reasonableness of his/her answers.



Dividing by Powers of Ten
Patterns and Relationships in Powers of Ten

Learn

Dividing by (10, 100, 1,000, ...)

8. ÷ 10 = 0.8	When dividing by 10, 100, or 1,000, move the decimal point to the **left** with the same number of **zeros**.	24.36 ÷ 10 = 2.436
8. ÷ 100 = 0.08		24.36 ÷ 100 = 0.2436
8. ÷ 1,000 = 0.008		24.36 ÷ 1,000 = 0.02436

Dividing by (0.1, 0.01, 0.001, ...)

8. ÷ 0.1 = 80	When dividing by 0.1, 0.01, or 0.001, move the decimal point to the right with the same number of **decimal parts**.	24.36 ÷ 0.1 = 243.6
8. ÷ 0.01 = 800		24.36 ÷ 0.01 = 2,436
8. ÷ 0.001 = 8,000		24.36 ÷ 0.001 = 24,360

The whole number place cannot be left blank, so "0" is added to save its place.

1 Complete the following patterns:

a	b	c
9 ÷ 10 = 0.9	1.42 ÷ 10 = 0.142	230 ÷ 10 = 23
9 ÷ 100 = 0.09	1.42 ÷ 100 = 0.0142	230 ÷ 100 = 2.3
9 ÷ 1,000 = 0.009	1.42 ÷ 1,000 = 0.00142	230 ÷ 1,000 = 0.23
9 ÷ 0.1 = 90	1.42 ÷ 0.1 = 14.2	230 ÷ 0.1 = 2,300
9 ÷ 0.01 = 900	1.42 ÷ 0.01 = 142	230 ÷ 0.01 = 23,000
9 ÷ 0.001 = 9,000	1.42 ÷ 0.001 = 1,420	230 ÷ 0.001 = 230,000

Theme 2

2 Divide:

a) 800 ÷ 1,000 = 0.8
b) 6,700 ÷ 100 = 67
c) 5.7 ÷ 0.1 = 57
d) 2.16 ÷ 0.01 = 216
e) 71 ÷ 1,000 = 0.071
f) 12.8 ÷ 0.01 = 1,280

3 Complete the following:

a) 0.4 ÷ 10 = 0.04
b) 0.4 ÷ 0.001 = 400
c) 29.08 ÷ 0.1 = 290.8
d) 0.1023 ÷ 0.01 = 10.23
e) 2,500 ÷ 1,000 = 2.5
f) 20 ÷ 0.001 = 20,000

Learn

Metric Conversions with Multiplication and Division



Multiplying by (0.1, 0.01, 0.001 ...) is equivalent to Dividing by (10, 100, 1,000 ...)

2.5 X 0.1 = **0.25** , 2.5 ÷ 10 = **0.25** → 2.5 X 0.1 = 2.5 ÷ 10 = 0.25

Multiplying by (10, 100, 1,000 ...) is equivalent to Dividing by (0.1, 0.01, 0.001 ...)

2.5 X 10 = **25** , 2.5 ÷ 0.1 = **25** → 2.5 X 10 = 2.5 ÷ 0.1 = 25

From the above, we find that:

- When converting from one measurement unit to another, you can use multiplication or division.

Ex. **Note the corresponding figure:**

- To convert from meters to centimeters, you can multiply by **100** or divide by **0.01**.
- To convert from centimeters to meters, you can multiply by **0.01** or divide by **100**.

m → cm: X 100, ÷ 0.01
cm → m: ÷ 100, X 0.01

Unit 5

4 **Complete each conversion. Then, write a multiplication equation and a division equation with the same answer:**

Ex. 45 mm = 4.5 cm 45 X 0.1 = 4.5 45 ÷ 10 = 4.5	ⓐ 4.65 m = 465 cm 4.65 X 100 = 465 4.65 ÷ 0.01 = 465
ⓑ 5.6 kg = 5,600 g 5.6 X 1,000 = 5,600 5.6 ÷ 0.001 = 5,600	ⓒ 42 dm = 420 cm 42 X 10 = 420 42 ÷ 0.1 = 420
ⓓ 0.02 L = 20 mL 0.02 X 1,000 = 20 0.02 ÷ 0.001 = 20	ⓔ 235 m = 0.235 km 235 X 0.001 = 0.235 235 ÷ 1,000 = 0.235



10

1 Choose the correct answer:

ⓐ 7,000 ÷ 1,000 = 7 (7 or 700 or 7000 or 0.7)

ⓑ 3,627 ÷ 1,000 = 3.627 (3,627 or 3.627 or 362.7 or 36.27)

ⓒ 960 ÷ 0.01 = 96,000 (96,000 or 9.6 or 960 or 9.600)

ⓓ 4.08 ÷ 0.1 = 40.8 (0.408 or 40.8 or 408 or 4080)

ⓔ 969 ÷ 10 = 96.9 (9690 or 0.969 or 9.69 or 96.9)

2 Complete the following:

ⓐ 3.07 ÷ 0.1 = 30.7

ⓑ 88.1 ÷ 100 = 0.881

ⓒ 29 ÷ 1,000 = 0.029

ⓓ 18 ÷ 0.001 = 18,000

3 Find in different ways:

32.8 km = 32.8 ÷ 0.001 = 32,800 m

= 32.8 X 1,000 = 32,800 m



Dividing Decimals by Whole Numbers
Dividing Decimals by Decimals

Learn: Dividing Decimals by Whole Numbers

- Assume that the two numbers are **whole numbers** and do the division.
- Put the decimal point in the result in the same position as the **dividend**.

Ex. Divide:

(a) 273.6 ÷ 8 = **34.2**

```
      034.2
  8 | 273.6
    - 24
      33
    - 32
       1 6
    -  1 6
         0
```

(b) 281.76 ÷ 12 = **23.48**

```
       023.48
  12 | 281.76
     - 24
       41
     - 36
        5 7
     -  4 8
          9 6
     -    9 6
          0 0
```

(c) 71.872 ÷ 32 = **2.246**

```
       02.246
  32 | 71.872
     - 64
       7 8
     - 6 4
       1 47
     - 1 28
         192
     -   192
           0
```

1 Use the **standard algorithm** to divide:

(a) 5.7÷3 = **1.9**

```
      1.9
  3 | 5.7
    - 3
      2 7
    - 2 7
        27
```

(b) 42.85÷5 = **8.57**

```
      08.57
  5 | 42.85
    - 40
      28
    - 25
       35
    -  35
       00
```

(c) 36.66 ÷ 13 = **2.82**

```
       02.82
  13 | 36.66
     - 26
       106
     - 104
        26
     -  26
        00
```

Dividing Decimals by Decimals

- Convert the divisor into a whole number: by moving the decimal point to the **right** (by multiplying by 10, 100, or 1,000...) according to the number of decimal places in the **divisor**.
- Move the decimal point to the **right** in the dividend by the same number of digits moved in the divisor.
- You may need to add **zeros** to the right of the dividend sometimes.
- Perform the division operation.

Ex. **Divide:**

ⓐ 17.01 ÷ 0.7 = **24.3**

X 10 X 10

170.1 ÷ 7

```
    024.3
7 | 170.1
  - 14
     30
  -  28
      21
  -   21
       0
```

ⓑ 8.4 ÷ 0.24 = **35**

X 100 X 100

840 ÷ 24

```
     035
24 | 840
   - 72
     120
   - 120
       0
```

ⓒ 2.4 ÷ 0.025 = **96**

X 1,000 X 1,000

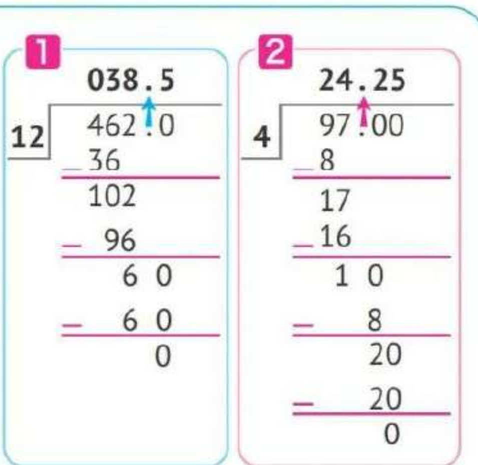
2,400 ÷ 25

```
     0096
25 | 2,400
   - 2 25
       150
   -   150
       000
```

Important Notes:

Sometimes we may need to add a decimal point and an addition to complete the division process, as in the following examples:

1. When dividing **462 ÷ 12**, the quotient is **38** and the remainder is **6**, **so** we add the decimal point and 0 to the dividend to complete the division (**456 ÷ 12 = 38.5**).
2. When dividing **97÷ 4**, the quotient is **24** and the remainder is **1**, **so** we add the decimal point and 0 to the dividend twice to complete the division (**97 ÷ 4 = 24.25**).



2 Use the standard algorithm to divide:

a) 183.6 ÷ 34 = 183.6 ÷ 34 = 5.4

```
     0 0 5.4
34 | 1 8 3.6
   - 1 7 0
       1 3 6
   -   1 3 6
       0 0 0
```

Draft

b) 78.6 ÷ 0.6 = 786 ÷ 6 = 131

```
    1 3 1
6 | 7 8 6
  - 6
    1 8
  - 1 8
        6
  -     6
        0
```

Draft

c) 98.48 ÷ 0.8 = 984.8 ÷ 8 = 123.1

```
    1 2 3.1
8 | 9 8 4.8
  - 8
    1 8
  - 1 6
        2 4
  -     2 4
        0 0 8
  -     0 0 8
            0
```

Draft

d) 8.395 ÷ 0.23 = 839.5 ÷ 23 = 36.5

```
       3 6.5
23 | 8 3 9.5
   - 6 9
     1 4 9
   - 1 3 8
       1 1 5
   -   1 1 5
       0 0 0
```

Draft

e) 9 ÷ 0.25 = 900 ÷ 25 = 36

```
     0 3 6
25 | 9 0 0
   - 7 5
     1 5 0
   - 1 5 0
     0 0 0
```

Draft

f) 2 ÷ 1.25 = 200 ÷ 125 = 1.6

```
      0 0 1.6
125 | 2 0 0.0
    - 1 2 5
        7 5 0
    -   7 5 0
        0 0 0
```

Draft



/ 10

1 Use the standard algorithm to divide:

a) 8.1 ÷ 3 = 2.7

```
     2.7
 3 | 8.1
   - 6
     21
   - 21
     00
```

b) 31.8 ÷ 12 = 2.65

```
      02.65
 12 | 31.80
    - 24
       78
    -  72
        60
    -   60
        00
```

2 Use the standard algorithm to divide:

a) 9.52 ÷ 0.7 = 13.6

```
     13.6
 7 | 95.2
   - 7
     25
   - 21
      42
   -  42
      00
```

b) 62.7 ÷ 0.12 = 522.5

```
      0522.5
 12 | 6270.0
    - 60
       27
    -  24
        30
    -   24
         60
    -    60
         00
```



Numerical Expressions and Patterns



Evaluating Numerical Expressions and Patterns



Order of Mathematical Operations
Numerical Expressions with Parentheses
Writing Expressions to Represent Scenarios
Identifying Numerical Patterns

Learning Objectives:

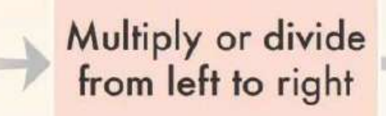
By the end of these lessons, the student will be able to:

- Use the order of operations to evaluate expressions with whole numbers and decimals.
- Identify how grouping symbols affect the order of operations.
- Evaluate an expression with grouping symbols.
- Evaluate expressions with grouping symbols.
- Write an expression to represent a written scenario.



Order of Mathematical Operations
Numerical Expressions with Parentheses
Writing Expressions to Represent Scenarios
Identifying Numerical Patterns





Perform operations inside parentheses if any → Multiply or divide from left to right → Add or subtract from left to right

Ex. Use the order of operations to evaluate the expression:

1. Perform the subtraction inside the parentheses. → $45 \div 5 + (9 - 3) \times 4$
2. Perform the division operation. → $= 45 \div 5 + 6 \times 4$
3. Perform the multiplication operation. → $= 9 + 6 \times 4$
4. Perform the addition operation. → $= 9 + 24$

$= 33$

1 Use the order of operations to evaluate each expression, one step at a time:

ⓐ $597.8 \div 6.1 + 13 \times 1.7$
= ....
= 98 + 22.1
= ....
= 120.1

ⓑ $56.5 \times 2.3 - 15 + 12.7$
= ....
= 129.95 – 15 + 12.7
= ....
= 127.65

ⓒ $82.43 \times 3.1 + 4.05 \div 0.01 - 2.5$
= ....
= 255.533 + 405 – 2.5
= ....
= 658.033

ⓓ $90.7 + 116.6 \times 0.1 \times 2 - 20$
= ....
= 90.7 + 23.32 – 20
= ....
= 94.02

ⓔ $(14.5 + 12.3 \div 0.01) - 9.8$
= ....
= (14.5 + 1230) – 9.8
= ....
= 1234.7

ⓕ $(45.42 - 17.11) \times (82.9 + 17.1)$
= ....
= 28.31 X 100
= ....
= 2,831

Theme 2

Learn

Expanded Order of Operations

Operations within parentheses ( )	→	Operations within brackets [ ]	→	Operations outside of parentheses or brackets
1 Multiply or divide from left to right 2 Add or subtract from left to right		1 Multiply or divide from left to right 2 Add or subtract from left to right		1 Multiply or divide from left to right 2 Add or subtract from left to right

Ex. Use the order of operations to evaluate the expression:

a Operations within parentheses ( ) → 3.5 X [1.4 ÷ (7.5 + 2.5) – 0.04] + 2.84

b Operations within brackets [ ] — 1 Division — 2 Subtraction

→ = 3.5 X [1.4 ÷ 10 – 0.04] + 2.84

→ = 3.5 X [0.14 – 0.04] + 2.84

c Operations outside of brackets — 1 Multiplication — 2 Addition

→ = 3.5 X 0.1 + 2.84

→ = 0.35 + 2.84 = 3.19

2 Use the order of operations to evaluate each expression:

a 2.5 ÷ [0.5 X (4.3 – 4.2)] – 2.4
= 2.5 ÷ [0.5 X 0.1] – 2.4
= 2.5 ÷ 0.05 – 2.4
= ....
= 47.6

b [8.4 ÷ (3.6 + 0.4) X 3] + 2.7
= [8.4 ÷ 4 X 3] + 2.7
= 2.1 X 3 + 2.7
= ....
= 9

c 7.5 X [4 – (7.6 + 2.4) X 0.2]
= 7.5 X [4 – 10 X 0.2]
= 7.5 X [4 – 2]
= ....
= 15

d [(2.5 – 0.1) X (0.07 + 0.03)] ÷ 1.2
= 2.4 X 0.1 ÷ 1.2
= 0.24 ÷ 1.2
= ....
= 0.2

Important Notes:

- Changing the order of operations leads to a change in the value.
- Note the following examples:

a 10 – 0.1 X 1.6 + 2
= 10 – 0.16 + 2
= 9.84 + 2
= 11.84

b 10 – 0.1 X (1.6 + 2)
= 10 – 0.1 X 3.6
= 10 – 0.36
= 9.64

c (10 – 0.1) X (1.6 + 2)
= 9.9 X (1.6 + 2)
= 9.9 X 3.6
= 35.64

3 Use the order of operations to evaluate each expression:

ⓐ 30 X 2.5 + 47.18 − 3.12 ÷ 0.1
= 75 + 47.18 − 31.2
=
=
= 90.98

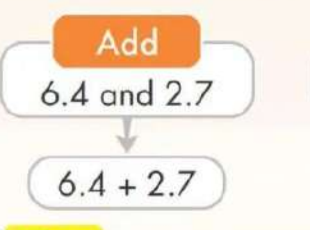
ⓑ 30 X (2.5 + 47.18 − 3.12 ÷ 0.1)
= 30 X (2.5 + 47.18 − 31.2)
= 30 X 18.48
=
= 554.4

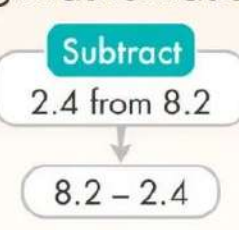
ⓒ 30 X [2.5 + (47.18 − 3.12) ÷ 0.1]
= 30 X [2.5 + 44.06 ÷ 0.1]
= 30 X [2.5 + 440.6]
= 30 X 443.1
= 13,293

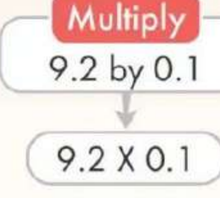
ⓓ (30 X 2.5 + 47.18 − 3.12) ÷ 0.1
= (75 + 47.18 − 3.12) ÷ 0.1
= (132.18 − 3.12) ÷ 0.1
= 119.06 ÷ 0.1
= 1,190.6

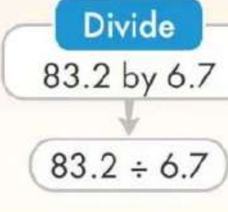
Learn Writing Expressions to Represent Scenarios

Note the following mathematical expressions:









Ex. **Write an expression that matches the clues. Then, evaluate the expression:**

Subtract 3.5 from 7.2 **and** divide the result by 10.

Parentheses are used if the first operation is subtraction or addition.

(7.2 − 3.5) ÷ 10
= 3.7 ÷ 10 = 0.37

Multiply 2.5 by 0.1 **and** add 3.2.

No parentheses are needed if the first operation is multiplication or division.

(2.5 x 0.1) + 3.2
= 0.25 + 3.2 = 3.45

Multiply 217 by 0.01 **and** subtract the result from 4.8, **then** divide by 10.

(4.8 − 217 X 0.01) ÷ 10
= (4.8 − 2.17) ÷ 10 = 2.63 ÷ 10 = 0.263

Parentheses are placed to perform subtraction before division, and parentheses are not placed for multiplication because it is natural that it is performed first.





Keywords



Add
Plus
Sum
Total



Subtract
Difference
Take away
Minus



Multiply
Times
Double (X 2)
Twice (X 2)
Triple (X 3)
Product



Divide
Half (÷ 2)
Third (÷ 3)
Quotient
Distribute

4 **For each problem, write an expression that matches the clues. Then, evaluate the expression:**

ⓐ Subtract 3.1 from 4.62. Then, multiply the result by 2.

$(4.62 - 3.1) \times 2 = 3.04$

ⓑ Divide 93 by 0.3 and then add 114.7. After that, divide the result by 5.

$(114.7 + 93 \div 0.3) \div 5 = 84.94$

ⓒ Add 30.4 , 87 and 17.5. Then, subtract the result from 224.7. Multiply by 100.

$[224.7 - (30.4 + 87 + 17.5)] \times 100$
$= 8,980$

ⓓ Multiply 7.6 by 100. Next, subtract 34.3. Then, add 12.4. Finally, divide the result by 0.1.

$(7.6 \times 100) - 34.3 + 12.4)$
$\div 0.1 = 7,381$

e Find the difference between 10 and 9.27. Multiply by the sum of 54 and 46. Then, divide 1,168 by the result.

1.168 ÷ [(10 – 9.27) X (46 + 54)] = 16

5 For each problem, write an expression that matches the scenario. Then, evaluate the expression:

a Kamel is saving money to buy a mobile. He currently has 1,000 LE. He begins working two jobs. At his first job, he saves 50 LE a week. At his second job, he saves 30 LE a week. He saves the money from his jobs for 4 weeks to add to his savings. How much does Kamel have saved at the end of the 4 weeks?

1,000 + (30 + 50) X 4 = 1,320

b Mounir is lifting weights to help train for an upcoming competition. He attaches 4 weights to his bar, a pair of larger weights and a pair of smaller weights. Each large weight has a mass of 33.75 kilograms and is 17.5 kg heavier than each of the smaller weights. Together, the four weights have a mass of 100 kg. What is the mass of one of the smaller weights?

(100 – 33.75 X 2) ÷ 2 = 16.25

Theme 2

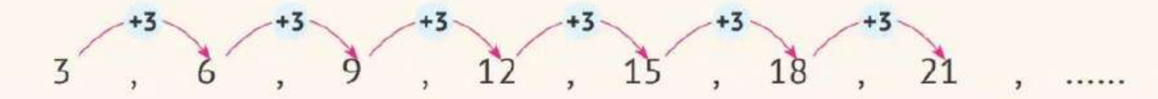
Learn

Numerical Pattern

It is a sequence of numbers according to a certain rule.

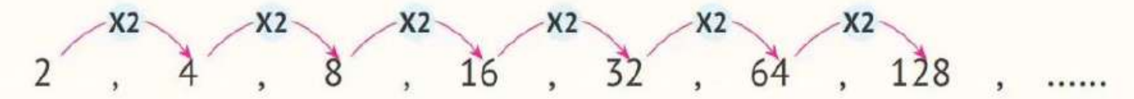
Pattern rule: is the relationship between the number and the number before it.

Ex. **Note the following patterns:**



Each number = the previous number + 3

The pattern rule is: n+3 (the variable n represents the previous number)



Each number = the previous number X 2

The pattern rule is: n X 2 (the variable n represents the previous number)

6 **Write the rule for each pattern with a variable. Then, complete the pattern by finding the missing values:**

a) 5 , 10 , 15 , 20 , 25 , 30 , ...35.... , ...40.... , ...45.... . Rule : ....n + 5.... .

b) 1 , 2 , 4 , 8 , 16 , 32 , ...64.... , ...128.... , ...256.... . Rule : ....n X 2.... .

c) 45 , 39 , 33 , 27 , 21 , ...15.... , ...9.... , ...3.... . Rule : ....n – 6.... .

d) 28 , 25 , 22 , 19 , 16 , 13 , ...10.... , ...7.... , ...4.... . Rule : ....n – 3.... .

Learn

Input/Output Tables

Pattern rule: is the relationship between the input number and the output number.

Note the following patterns:

Input	Output
1	5
2	10
3	15
4	20

Output number = Input number X 5
Rule: n X 5

Input	Output
8	2
16	4
24	6
32	8

Output number = Input number ÷ 4
Rule: n ÷ 4

7 **Write the rule for each pattern with a variable. Then, complete the pattern by finding the missing values:**

ⓐ

Input	Output
8	2
12	3
16	4
20	5
24	6

Rule: n ÷ 4

ⓑ

Input	Output
2	6
3	9
4	12
5	15
6	18

Rule: n X 3

ⓒ

Input	Output
6	1
8	3
10	5
12	7
14	9

Rule: n – 5

ⓓ

Input	Output
6	4
8	6
10	8
12	10
14	12

Rule: n – 2



10

1 Choose the correct answer:

a) The first operation that should be done in: (56.5 X 2.3) – (15 + 12.7) is **Multiplying** (adding or subtracting or multiplying or dividing)

b) The first operation that should be done in: (14.5 – 12.3) ÷ (0.01 + 9.8) is **Subtracting** (adding or subtracting or multiplying or dividing)

c) The first operation that should be done in: (45.42 – 17.11) X (82.9 + 17.1) is **Subtracting** (adding or subtracting or multiplying or dividing)

2 Use the order of operations to evaluate each expression, one step at a time:

2.5 ÷ [5 X (6.8 – 6.7)] – 0.9 = **2.5 ÷ [5 X 0.1] – 0.9**

= **2.5 ÷ 0.5 – 0.9**

= **4.1**

3 Subtract 4.7 from 9.62. Then, multiply the result by 3.5.

(9.62 - 4.7) X 3.5 = 17.22

4 Write the rule for each pattern with a variable. Then, complete the pattern by finding the missing values.

1 , 6 , 11 , 16 , 21 , **26** , **31** . Rule **N + 5** .

Guide Answers — Main Book

Theme 1

Unit 1

Concept 1

Lesson 1 

Decimals to the Thousandths Place

1. (a) 0.2 (b) 0.05 (c) 0.13
   (d) 0.004 (e) 0.085 (f) 0.792
   (g) 2.3 (h) 41.08 (i) 32.74
   (j) 50.016 (k) 961.205
2. (a) Nine tenths. (b) Six hundredths.
   (c) Sixty-nine hundredths
   (d) Forty-five hundredths
   (e) Eight hundreds twenty-four thousandths
   (f) Six and eight tenths
   (g) Twenty-five and eight hundredths
   (h) Nine hundreds forty-five and twenty-five hundredths
   (i) Twenty and thirty-six thousandths
   (j) Three hundred fifty-eight and one hundred twenty-four thousandths
3. (a) Tenths, 0.9 (b) Thousands, 7,000
   (c) Tens, 0 (d) Ones, 5
4. (a) Hundredths, 0.06
   (b) Hundreds, 700
   (c) Thousandths, 0.009
   (d) Ten Millions, 30,000,000 (e) Tenths, 0

Quiz

1. (a) 0.3 (b) Thousandths (c) 0.07
2. (a) Sixty-three and seven hundred five thousandths
   (b) 24.048 (c) hundredths, 0.04
3. (a) → 3 (b) → 1
   (c) → 4 (d) → 2

Lessons 2&3

Place Value Shuffle & Composing and Decomposing Decimals

1. (a) 6, increased from 6 to 60
   8, increased from 80 to 800
   3, increased from 300 to 3,000
   386, increased from 386 to 3,860
   386 X 10 = 3,860
   (b) 5, increased from 0.5 to 5
   2, increased from 2 to 20
   2.5, increased from 2.5 to 25
   2.5 X 10 = 25
2. (a) 5, decreased from 5 to 0.5
   1, decreased from 10 to 1
   9, decreased from 900 to 90
   915, decreased from 915 to 91.5
   915 ÷ 10 = 91.5
   (b) 7, decreased from 0.7 to 0.07
   8, decreased from 8 to 0.8
   8.7, decreased from 8.7 to 0.87
   8.7 ÷ 10 = 0.87
3. (a) 756.5 (b) 8.319 (c) 35.87
   (d) 95.24 (e) 2,540 (f) 36
4. (a) 34.527 = 30 + 4 + 0.5 + 0.02 + 0.007
   = 34 + 0.527
   = 30 + 4 + 0.527
   (b) 21.045 = 20 + 1 + 0.04 + 0.005
   = 20 + 1 + 0.045
   = 21 + 0.045
   (c) 14.932 = 10 + 4 + 0.9 + 0.03 + 0.002
   = 14 + 0.932
   = 14 + 0.9 + 0.03 + 0.002
   (d) 231.128 = 200 + 30 + 1 + 0.1 + 0.02 + 0.008
   = 231 + 0.128
   = 231 + 0.1 + 0.02 + 0.008
   (e) 508.17 = 500 + 8 + 0.1 + 0.07
   = 508 + 0.17
   = 508 + 0.1 + 0.07

5. a) 230.507 b) 65.089 c) 24.075
   d) 65.729 e) 125.87

Quiz

1. a) 361.7 b) 62.48
   c) 20.156 d) 508.207
2. a) • 24 + 0.15 • 20 + 4 + 0.15 • 24 + 0.1 + 0.05
   b) Thirty and twenty-five thousandths.
   c) 10,000 - 100 - 10
3. a) → 3 b) → 1 c) → 2

Lesson 4

Comparing Decimals

1. a) < b) < c) <
   d) > e) > f) =
2. a) 1.440 b) 1.3
3. a) 20.001 b) 3.009
4. 53.6, 35.92
5. 25.009, 2.509
6. 45.12 < 45.21 < 51.24 < 54.12 < 54.21
7. 100.12 > 21.010 > 12.001 > 10.012 > 2.011



1. a) < b) > c) >
2. 251.72 < 257.12 < 257.21 < 725.12
3. 2.025 - 2.008 - 1.99 - 0.555

Lesson 5

Rounding Decimals

1. a) 3 b) 66 c) 20
2. a) 0.7 b) 45.5 c) 4
3. a) 6.36 b) 0.25 c) 10
4. a) 754 b) 56.3 c) 60
   d) 782.48 e) 1,000 f) 0.04
5. a) 56 / 56.3 / 56.28
   b) 572 / 572.1 / 572.09
   c) 1 / 0.9 / 0.90 d) 50 / 50.1 / 50.10

Quiz

1. a) 24 b) 59.5 c) 369.25
   d) 0 e) 20 f) 0.09
2. a) Tenth. b) Ten.
   c) Hundredth. d) Ten.

Concept 2

Lessons 6&7

Estimating Decimal Sums& Modeling Decimal Addition

1. Answer by yourself.
2. a) 5 + 0.95 + 21 + 0.002
   5 + 1 + 21 + 0 = 27
   b) 6 + 0.552 + 82 + 0.495
   6 + 0.5 + 82 + 0.5 = 89
   c) 12 + 0.954 + 3 + 0.45
   12 + 1 + 3 + 0.5 = 16.5
3. a) 2 + 4 = 6 b) 3.45 + 8.09 = 11.54
   c) 10 + 4.6 = 14.6
   d) 4.982 + 5.019 = 10.001
4. Estimate: 54 + 46 = 100
   Yes, they have enough money.
5. a) 0.7 b) 0.75 c) 0.43
   d) 1.52 e) 1.43 f) 1.63
6. a) 0.25 + 0.47 = 0.72
   b) 0.93 + 0.79 = 1.72
7. a) 3.89 b) 4.135 c) 6.858
   d) 128.44 e) 234.72
8. a) 48.126 b) 34.548 c) 171.28
   d) 41.39 e) 61.89
9. a) 7 b) 11 c) 44 d) 129
10. 92.61 + 147.7 = 240.31 km

Quiz

1. a) 1 + 0 = 1 b) 3.2 + 12.6 = 15.8
   c) 55.76 + 36.96 = 92.72 d) 17
2. 241.732

Lessons 8-11

Modeling Subtracting Decimals, Estimating Decimal Differences, Subtracting to the Thousandths Place & Decimal Story Problems

1. (a) 0.3 (b) 0.45 (c) 0.13 (d) 0.42 (e) 0.18 (f) 0.63
2. (a) 1.55 – 0.73 = 0.82 (b) 0.46 – 0.46 = 0
3. (a) 9.71 (b) 8.385 (c) 7.227 (d) 138.29 (e) 241.655
4. (a) 68.398 (b) 24.83 (c) 89.655 (d) 37.82 (e) 49.921
5. (a) 33 (b) 37 (c) 325 (d) 34
6. (a) 0.5 (b) 0.5 (c) 0.5 (d) 0
7. (a) 4.9 (b) 264.1 (c) 2.6 (d) 0.89
8. 67.3 – 11.7 = 55.6 m
9. 53.25 + 46.8 = 100.05 km
10. 16.7 + 16.7 = 33.4 km
11. 16.7 – 3.25 = 13.45 km

Quiz

1. (a) 13.82 (b) 30.06 (c) 438 (d) 5
2. (a) 204.334 (b) 65.912 (c) 71.408

Unit 2

Concept 1

Lesson 1

Expressions, Equations, and Variables

1. (a) Equation (b) Expression (c) Equation (d) Expression (e) Other (f) Equation (g) Expression (h) Other
2. (a) w = 25.15 – 14.5
   (b) y = 45 – 28 (c) m = 4,200 – 3,350
   (d) a = 750,250 + 90,990

Quiz

1. (a) equation (b) mathematical expression (c) other
2. (a) A = 38 – 23
3. (b) B = 12 – 7

Lessons 2&3

Variables in Equations & Telling Stories with Numbers

1. (a) P = 10.224 – 8.235
   P = 1.989
   (b) t = 2.445 + 0.26
   t = 2.705
   (c) h = 6.82 – 1.023
   h = 5.797
   (d) v = 100.01 – 42.809
   v = 57.201
   (e) m = 9.271 – (5.52 + 2.041)
   m = 9.271 – 7.561 , m = 1.71
   (f) a = 5.477 – 1.52
   a = 3.957
2. Answer by yourself.

Quiz

1. (a) m – 5.2 – 3.7 – 1.5
   (b) h = 4.89 + 3.2 = 8.09
   (c) a = 9.9 – 3.6 = 6.3
2. (a) 1.3 (b) 1.1
3. a = 12 + 15 a = 27 LE

Concept 2

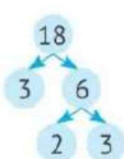
Lesson 4

Prime Factorization

1. (a) 16 = 2 X 2 X 2 X 2
   (b) 20 = 5 X 2 X 2
   (c) 36 = 2 X 2 X 3 X 3
   (d) 48 = 2 X 3 X 2 X 2 X 2

Quiz

1. a) 2 b) 3
   c) 2, 3, 5
2. 18 = 2 X 3 X 3



3. a) 12 b) 30

Lesson 5

Greatest Common Factors (GCF)

1. a) 14 b) 9
   c) 4 d) 16
2. GCF = 5
   Greatest number of equal groups = 5 groups.

Quiz

1. a) 3 b) 2 c) 1
2. 12 = 2 X 2 X 3
   18 = 2 X 3 X 3 GCF = 2 X 3 = 6
3. 20 = 2 X 2 X 5
   15 = 5 X 3 GCF = 5
   Largest number is 5
   Number of red apple = 20 ÷ 5 = 4 apples.
   Number of green apple = 15 ÷ 5 = 3 apples.

Lessons 6&7

Identifying Multiples & Least Common Multiple (LCM)

1. a) 0 / 2 / 4 / 6 / 8 / 10 / 12 / 14 / 16 / 18
   b) 0 / 5 / 10 / 15 / 20
   c) 0 / 10 / 20
2. a) 0 / 3 / 6 / 9 / 12 / 15 / 18 / 21 / 24 / 27
   b) 0 / 6 / 12 / 18 / 24 / 30
   c) 0 / 9 / 18 d) 0 / 18
3. Answer by yourself.
4. a) GCF = 3 , LCM = 18
   b) GCF = 5 , LCM = 30
   c) GCF = 4 , LCM = 8
   d) GCF = 3 , LCM = 36

Quiz

1. a) 8 b) 10 c) 0
2. 6 = 2 X 3
   18 = 2 X 2 X 2
   GCF = 2
   LCM = 2 X 2 X 3 X 2 = 24
3. 6 X 5 = 2 X 3 X 5
   3 X 14 = 2 X 3 X 7
   GCF = 2 X 3 = 6
   LCM = 2 X 3 X 5 X 7 = 210

Lesson 8

Factors or Multiples?

1. a) GCF = 4 , LCM = 60 b) GCF = 8 , LCM = 48
   c) GCF = 5 , LCM = 90 d) GCF = 9 , LCM = 54
2. LCM = 24 days.
3. GCF = 6 containers



Quiz

1. a) Multiply b) Factor c) 1
   d) 1 e) 14
2. 8 = 2 X 2 X 2
   10 = 2 X 5
   GCF = 2
   LCM = 2 X 2 X 2 X 5 = 40

   8: 2, 2 | both: 2 | 10: 5

3. LCM for 10 and 8 is 40
   Together after 40 days.

Unit 3

Concept 1

Lesson 

Using the Area Model to Multiply

1. a) 988 b) 2,232
   c) 22,932 d) 22,274

2 a 8 X 527= 4,216 b 59 X 28 = 1,652

c 43 X 856 = 36,808 d 98 X 603= 59,094

3 a 187 X 6 = 1,122 km

b 60 X 105 = 6,300 km

Quiz

1 65 X 23

1,200 + 180 + 100 + 15

= 1,495

	60	5
20	1,200	100
3	180	15

2 509 X 28

10,000 + 4,000 + 180 + 72

= 14,252

	500	9
20	10,000	180
8	4,000	72

3 49 X 5

200 + 45 = 245 eggs

	40	9
5	200	45

Lesson 2

The Distributive Property of Multiplication

1 a 7 X 63 = 7 X (60 + 3) = (7 X 60) + (7 X 3)

= 420 + 21 = 441

b 9 x 208 = 9 X (200 + 8)

= (9 X 200) + (9 X 8)

= 1,800 + 72

= 1,872

c 24 X 38 = (20 + 4) X (30 + 8)

= (20 X 30) + (20 X 8) + (4 X 30) + (4 X 8)

= 600 + 160 + 120 +32 = 912

d 82 X 107 = (80 + 2) X (100 + 7)

= (80 X 100) + (80 X 7) + (2 X 100) + (2 X 7)

= 8,000 + 560 + 200 + 14 = 8,774

e 62 X 142 = (60 + 2) X (100 + 40 + 2)

= (60 X 100) + (60 X 40) + (60 X 2) + (2 X 100) + (2 X 40) + (2 X 2)

= 6,000 + 2,400 + 120 + 200 + 80 + 4

= 8,804

f 43 X 217 = (40 + 3) X (200 + 10 + 7)

= (40 X 200) + (40 X 10) + (40 X 7) + (3 X 200) + (3 X 10) + (3 X 7)

= 8,000 + 400 + 280 + 600 + 30 + 21

= 9,331

2 - 1st way: 74 X 12 = (70 + 4) X (10 + 2) = 888

- 2nd way: 74 X 12 = (70 + 4) X (6 + 6) = 888

- 3rd way: 74 X 12 = (40 + 30 + 4) X (10 + 2) = 888

3 a 8 X 37 = 8 X (30 + 7) = 240 + 56 = 296

b 5 X 264 = 5 X (200 + 60 + 4)

= (5 X 200) + (5 X60) + (5 X 4)

= 1,000 + 300 + 20 = 1,320

c 26 X 73 = (20 + 6) X (70 + 3)

= (20 X 70) + (20 X 3) + (6 X 70) + (6 X 3)

= 1,400 + 60 + 420 + 18 = 1,898

4 a 24 X 53 = 1,272 b 28 X 47 = 1,316



1 a 24 X 37 b 7 X 2

2 35 X 27

= 945

	30	5
20	600	100
7	210	32

3 (40 X 600) + (40 X 20) + (40 X 7) + (3 X 600) + (3 X 20) + (3 X 7)

627 X 43 = 26,961

	600	20	7
40	24,000	800	280
3	1,800	60	21

Concept 2

Lessons 3-5

Multiplying by a 2-Digit Number Using Algorithm & Multiplying Multi-Digit Numbers & Multiplication Problems in the Real World

1 a 2,028 b 2,331

c 1,748 d 2,438

2 a 17,856 b 96,824
c 157,941 d 558.744

3 a 2,925 b 13,104 c 38,266
d 9,331 e 54,075

4 a 2,232 b 7,416
c 11,128 d 8,774

5 a Actual product: 3,551, Estimation: 3,500
b Actual product: 6,786, Estimation: 8,000

6 a 753 + 402 = 1,155 kebabs,
1,155 X 83 = 95,865 g
b 170 X 3 X 18 = 9,180 g
c 250 + 15 + 30 = 295 mL
295 X 18 = 5,310 mL

Quiz

1 a

	600	20	7
40	24,000	800	280
3	1,800	60	21

3,000 + 600 + 150 + 600 + 120 + 30 = 4,500

b

$$\begin{array}{r} 256 \\ \times\ \ 33 \\ \hline 768 \\ +\ 7,680 \\ \hline 8,448 \end{array}$$

c (70 + 5) X (200 + 40 + 8)
= (70 X 200) + (70 X 40) + (70 X 8)
= (5 X 200) + (5 X 40) + (5 X 8)
= 14,000 + 2,800 + 560 + 1,000 + 80 + 40
= 18,600

2

$$\begin{array}{r} 189 \\ \times\ \ 34 \\ \hline 756 \\ +\ 5,670 \\ \hline 6,426 \end{array} \longrightarrow \begin{array}{r} 200 \\ \times\ \ 30 \\ \hline 6,000 \end{array}$$

Theme 2

Unit 4

Concept 1

Lessons 1&2

Dividing by a Two-Digit Number & Estimating Quotients

1 a 15 (R1) b 69 (R6)
c 407 d 1,364

2 a 52 (R10) b 24 (R11) c 123
d 126 (R8) e 234

3 a 243 b 144

4 a 37 (R14) , 40 , reasonable
b 40 (R 22) , 40 , reasonable
c 312 , 300 , reasonable

Quiz

1 a 9 b 3 c 55 d 2

2 673 ÷ 5 = 134 (R3)

3 4,000 ÷ 40 = 100

Concept 2

Lessons 3-5

Using the division Algorithm, The Relation Between Division and Multiplication & Multistep Story Problems

1 a 157 b 649 (R2)
c 1,188 (R1) d 1,203 (R4)

2 a 23 b 1,048 (R16)
c 203 (R12) d 211 (R27)

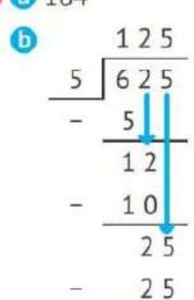
3 a 350 ÷ 12 = 29 (R2) , Number of bags = 30
b Paper Palace = 3 X 762 = 2,286 reams
Office Supply = 2,286 − 143 = 2,143 reams
Sum = 762 + 2,286 + 2,143 = 5,191 reams
c Red = 5 X 24 = 120 pens
blue = 4 X 12 = 48 pens
Each friend will get = (120 + 48) ÷ 8
= 168 ÷ 8 = 21 pens

d 72 X 55 = 3,960 books
3,960 ÷ 12 = 330 books



1 a 164

b



c

```
     1 2 4
 8 | 9 9 2
 -   8
     1 9
 -   1 6
       3 2
 -     3 2
       0 0
```

2

```
       3 6 7
 15 | 5,5 0 5
 -    4 5
      1 0 0
 -      9 0
        1 0 5
 -      1 0 5
        0 0 0
```

Unit 5

Concept 1

Lessons 1&2

Multiplying by Powers of Ten & Multiplying Decimals by Whole Numbers

1 a 90 / 900 / 9,000 / 0.9 / 0.09 / 0.009
b 12 / 120 – 1,200 / 0.12 / 0.012 / 0.0012
c 235 , 2350 , 23500 , 2.35 , 0.235 , 0.0235

2 a 42 b 36 c 0.074
d 124.5 e 6.021 f 1.414
g 20 h 0.13 i 0.012

3 30/ 300 / 3,000 / 3 / 0.3 / 0.03 / 0.003
300 / 3,000 / 30,000 / 30 / 3 / 0.3 / 0.03
3 / 30 / 300 / 0.3 / 0.03 / 0.003 / 0.0003

4 a 78.2 b 7.82 c 78.2
d 7.82 e 0.782 f 0.782

5 a 1.6 b 0.56 c 0.081
d 8.4 e 2.34 f 72.56
g 0.71 h 0.2 i 1.5

Quiz

1 a 327 b 8.5
c 0.028 d 62.79

2 a 0.35 b 1.2 c 0.081

3 a 61.64 b 615.4 c 6.154

Lessons 3&4

Multiplying Tenths by Tenths & Multiplying Using the Area of Rectangle Model

1 a 0.32 b 0.27 c 0.14
d 0.75 e 0.34

2 a 2.16 b 15.12 c 202.02

Quiz

1 a 0.21 b 0.72

2 a 0.2 b 0.24

3 4.905

Lessons 5&6

Multiplying Decimals through the Hundredths Place & Multiplying Decimals through the Thousandths Place

1 [24 X 13 = 72 + 240 = 312]
a 31.2 b 31.2 c 3.12
d 0.312 e 0.312 f 312
g 3.12 h 0.0312

2 a 14.76 b 452.4 c 4.625

d 178.02 e 7.384 f 10.98
g 10.5882 h 84.336

3 a 2.45 b 25.84
c 3.234 d 0.8676

Quiz

1 a 1.715 b 171.5 c 17.15

2 a 10.03 b 4.272 c 444.862

3 247.76

Lessons 7-9

Decimals and the Metric System, Measurement, Decimals, and Powers of Ten & Solving Multistep Story Problems

1 a 3,465 X 0.001 = 3.465
b 245 X 0.01 = 2.45
c 0.7 X 100 = 70 d 7.56 X 10 = 75.6
e 25,378 X 0.001 = 25.378
f 56.89 X 1,000 = 56,890
g 56 X 0.001 = 0.056

2 a She needs = 1.35 X 4 = 5.4 m
b 320 + 250 = 570 mL
The remainder = 1,000 – 570 = 430 mL = 0.43 L
c Ehab grew = 150 – 138.2 = 11.8 cm
d 3.6 X 7.25 = 26.1 cm^2, 5.5 X 8 = 44 cm^2
The difference = 44 – 26.1 = 17.9 cm^2

Quiz

1 a 2.575 b 6.48
c 75 d 12,870

2 a 482.9 b 9.5
c 6,700 d 0.125

3 5kg = 5,000 g

Concept 2

Lessons 10-11

Dividing by Powers of Ten& Patterns and Relationships in Powers of Ten

1 a 0.9 / 0.09 / 0.009 / 90 / 900 / 9,000
b 0.142 / 0.0142 / 0.00142 / 14.2 / 142 / 1,420
c 23 / 2.3 / 0.23 / 2,300 / 23,000 / 230,000

2 a 0.8 b 67 c 57
d 216 e 0.071 f 1,280

3 a 10 b 0.001 c 0.1
d 0.1023 e 2,500 f 20

4 a 465 4.65 X 100 = 465
4.65 ÷ 0.01 = 465
b 5,600 5.6 X 1,000 = 5,600
5.6 ÷ 0.001 = 5,600
c 420 42 X 10 = 420
42 ÷ 0.1 = 420
d 20 0.02 X 1,000 = 20
0.02 ÷ 0.001 = 20
e 0.235 235 X 0.001 = 0.235
235 ÷ 1,000 = 0.235

Quiz

1 a 7 b 3.627 c 96,000
d 40.8 e 96.9

2 a 0.1 b 100
c 29 d 18

3 • 0.001 = 32,800
• 1,000 = 32,800

Lessons 12&13

Dividing Decimals by Whole Numbers& Dividing Decimals by Decimals

1. a) 1.9 b) 8.57 c) 2.82
2. a) 5.4 b) 131 c) 123.1
   d) 36.5 e) 36 f) 1.6

Quiz

1. a) 2.7 b) 2.65
2. a) 13.6 b) 522.5

Unit 6

Concept 1

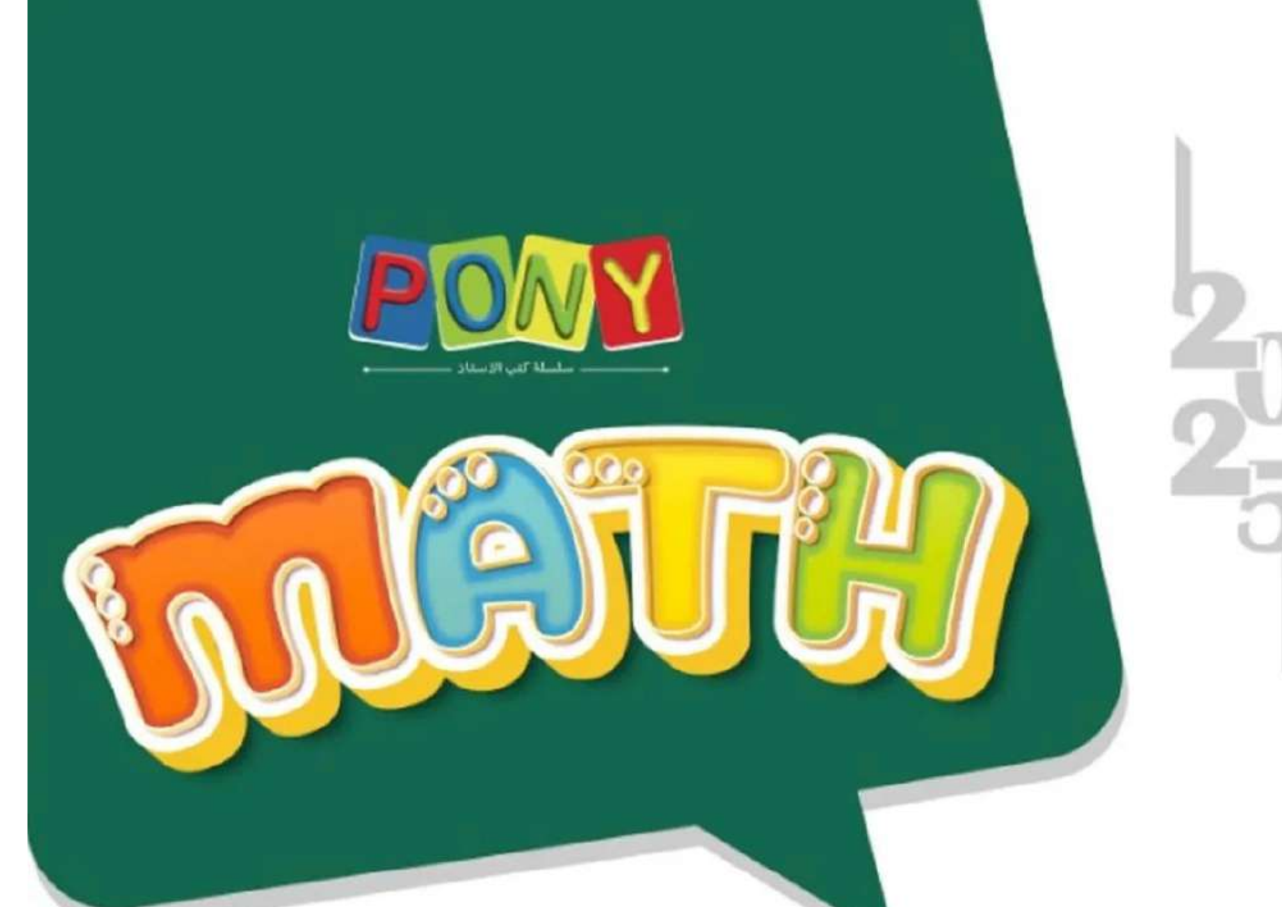
Lessons 1-4

Order of Mathematical Operations, Numerical Expressions with Parentheses& Writing Expressions to Represent Scenarios& Identifying Numerical Patterns

1. a) 120.1 b) 127.65 c) 658.033
   d) 94.02 e) 1234.7 f) 2,831
2. a) 47.6 b) 9
   c) 15 d) 0.2
3. a) 90.98 b) 554.4
   c) 13,293 d) 1,190.6
4. a) (4.62 – 3.1) X 2 = 3.04
   b) (114.7 + 93 ÷ 0.3) ÷ 5 = 84.94
   c) [224.7 – (30.4 + 87 + 17.5)] X 100 = 8,980
   d) (7.6 X 100) + 34.3 + 12.4) ÷ 0.1 = 7,381
   e) 1.168 ÷ [(10 – 9.27) X (46 + 54)] = 16
5. a) 1,000 + (30 + 50) X 4 = 1,320
   b) (100 – 33.75 X 2) ÷ 2 = 16.5
6. a) 35 , 40 , 45, Rule: n + 5
   b) 64 , 128 , 256, Rule: n X 2
   c) 15 , 9 , 3, Rule: n – 6
   d) 10 , 7 , 4, Rule: n – 3
7. a) 16 , 20 , 6 , Rule: n ÷ 4
   b) 12 , 5 , 6 , Rule: n X 3
   c) 7 , 14 , Rule: n – 5
   d) 12 , 12 , Rule: n – 2



1. a) multiplying b) subtracting
   c) subtracting
2. 4.1
3. (9.62 – 4.7) X 3.5 = 17.22
4. 26,31 rule: N + 5



2025

EXERCISES, FINAL REVISION & EXAMS

5 PRIMARY FIRST TERM



Contents



Number Sense and Operations



Mathematical Operations and Algebraic Thinking

Theme 1

Number Sense and Operations

Theme Units:

Unit 1 Decimal Place Value and Computation

Concept 1.1: Decimals to the Thousandths Place

Concept 1.2: Adding and Subtracting Decimals

Unit 2 Number Relationships

Concept 2.1: Expressions, Equations, and the Real World

Concept 2.2: Factors and Multiples

Unit 3 Multiplication with Whole Numbers

Concept 3.1: Models for Multiplication

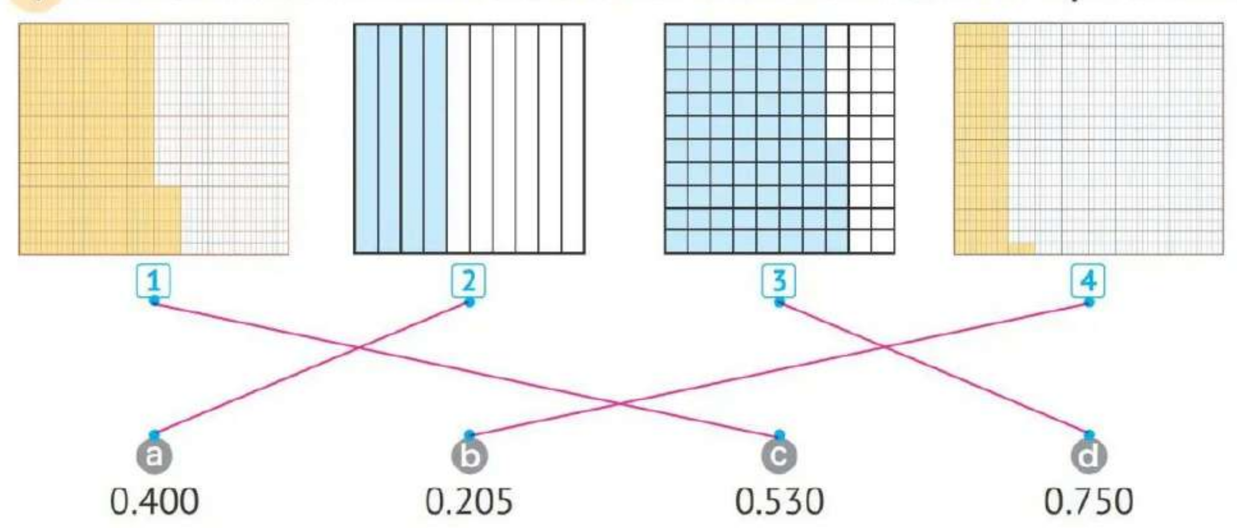
Concept 3.2: Multiplying 4-Digit Numbers by 2-Digit Numbers

Unit 1 Decimal Place Value and Computation

Concept 1.1 Decimals to the Thousandths Place

Lesson 1 Decimals to the Thousandths Place

1 **Match each decimal model to the decimal number it represents:**



2 **Write the following numbers in the standard form:**

1. Five Tenths: 0.5
2. Three Hundredths: 0.03
3. Sixteen Hundredths: 0.16
4. Twenty-nine Thousandths: 0.029
5. Five and three hundredths: 5.03
6. Fifty-six and seventeen hundredths: 56.17
7. One hundred fifteen and seventy-six hundredths: 115.76
8. Three thousand, three hundred and three tenths: 3,300.3
9. Three million, twenty-six thousand, seventy-five and one hundred seventy-two thousandths: 3,026,075.172
10. Fifteen million, seven hundred thousandth, five and seventeen hundredths: 15,700,005.17

3 Write the following numbers in the word form:

1. 0.8: Eight tenths .
2. 0.23: Twenty-three hundredths .
3. 0.316: Three hundred sixteen thousandths .
4. 15.3: Fifteen and three tenths .
5. 5,328.96: Five thousand, three hundred twenty-eight and ninety-six hundredths.
6. 13.629: Thirteen and six hundred twenty-nine thousandths .
7. 3,120,000.03: Three million, one hundred twenty thousand and three hundredths

4 Complete the following:

1. Three hundred fifty-nine million, forty thousand, six and seventy-nine hundredths (**In standard form**): 359,040,006.79
2. Six milliard, seventy thousand, ninety-six and five thousandths (**In standard form**): 6,000,070,096.005
3. 9,200,000,065.027 (**In word form**): Nine milliard, two hundred million, sixty-five and twenty-seven thousandths.
4. 205,009.04 (**In word form**): Two hundred five thousand, nine and four hundredths .
5. In 457,258,350.**6**8, the digit 6 is in the Tenths place and its value is 0.6 .
6. In 500,725,235.102, the digit in the Hundredths is 0 and its value is 0 .
7. The value of 9 in the Hundredths place is 0.09 .
8. If the value of 3 is 0.3, then its place value is Tenths .
9. 0.523 = 3 Thousandths, 2 Hundredths, 5 Tenths
10. 0.709 = 7 Tenths, 9 Thousandths

Theme 1

5 Choose the correct answer:

1. Seven milliard, fifty thousand and seven hundredths = 7,000,050.000.07

   (7,050.07 or 7,000,050.07 or 7,000,050,000.07 or 7,000,500,000.07)

2. 56,000,500.035 (**In word form**): ....

   (fifty-six thousand, five hundred and and thirty-five thousandths

   or fifty-six million, five hundred and thirty-five thousandths

   or fifty-six million, five hundred thousand and thirty-five thousandths

   or fifty-six million, five hundred thousand and thirty-five hundredths)

3. The place value of 5 in **5**28,239.247 is Hundred Thousands

   (Hundred Millions or Hundred Thousands or Hundreds or Hundredths)

4. The value of 0 in 247,369.2**0**5 is 0 .

   (0.001 or 0.01 or 0.1 or 0)

5. If the value of 7 is 0.7, then its place value is Tenths .

   (Tenths or Ones or Thousandths or Hundredths)

6. If the place value of 3 is Thousandths, then its value is 0.003 .

   (0.003 or 0.03 or 0.3 or 3,000)

7. $4\frac{45}{100}$ = 4.45 (4.45 or 445 or 4.045 or 45.4)

8. 2.053 = $2\frac{53}{1,000}$ ($2\frac{53}{10}$ or $2\frac{53}{100}$ or $2\frac{53}{1,000}$ or $\frac{253}{1,000}$)

9. The number of Tenths in 0.386 is 3 parts. (3 or 30 or 83 or 386)

10. 6 Hundredths = 0.060 (6 or 0.60 or 0.060 or 0.006)

11. 6 Tenths, 9 Thousandths = 0.609 (0.609 or 0.069 or 6.009 or 0.906)

Assessment 1 on Lesson 1

Unit 1

First: Complete the following:

1. Nine milliard, ninety thousand and nine thousandths **(In digits)**: 9,000,090,000.009
2. 6,200.09 **(In word form)**: Six thousand, two hundred and nine hundredths
3. The place value of **9** in 596,258.27 is Ten Thousands .
4. 3 Tens + 3 Tenths = 30.3
5. The value of **0** in 653,852.208 is 0 .

Second: Choose the correct answer:

1. Four hundred million, thirty thousand and three hundredths = 400,030,000.03
   - (a) 400,030,000.03
   - (b) 400,030.03
   - (c) 4,030,000.30
   - (d) 430.30
2. 3,000,003.003 **(In word form)**: ....
   - (a) Three hundred, three million and three thousandths
   - (b) Three million, three and three thousandths
   - (c) Three million, three thousand and three thousandths
   - (d) Three hundred thousand, three and three thousandths
3. In 40.056, the place value of 5 is Hundredths.
   - (a) 500.46
   - (b) 46.005
   - (c) 40.056
   - (d) 46,500
4. The digit that represents the Thousandths in 4,568.178 is 8 .
   - (a) 1
   - (b) 7
   - (c) 8
   - (d) 4

Third: Match:

1. Nine hundred million **and** nine hundred thousandths	(a) 900,000.90
2. Nine hundred thousand **and** ninety hundredths	(b) 909.009
3. Nine hundred, nine **and** nine thousandths	(c) 900,000,000.900
4. Nine hundred million **and** nine thousandths	(d) 900,000.09
5. Nine hundred thousand **and** nine hundredths	(e) 900,000,000.009

Lessons 2&3 Place Value Shuffle
Composing and Decomposing Decimals

1 Find the result of each of the following using the place value chart:

1 4.52 X 10 = 45.2

Thousands			Ones			Decimal Point	Decimals		
Hundreds	Tens	Ones	Hundreds	Tens	Ones		Tenths	Hundredths	Thousandths
					4	.	5	2	
				4	5	.	2		

2 456.258 X 10 = 4,562.58

Thousands			Ones			Decimal Point	Decimals		
Hundreds	Tens	Ones	Hundreds	Tens	Ones		Tenths	Hundredths	Thousandths
			4	5	6	.	2	5	8
		4	5	6	2	.	5	8	

3 56.28 ÷10 = 5.628

Thousands			Ones			Decimal Point	Decimals		
Hundreds	Tens	Ones	Hundreds	Tens	Ones		Tenths	Hundredths	Thousandths
				5	6	.	2	8	
					5	.	6	2	8

4 253.9 ÷ 10 = 25.39

Thousands			Ones			Decimal Point	Decimals		
Hundreds	Tens	Ones	Hundreds	Tens	Ones		Tenths	Hundredths	Thousandths
			2	5	3	.	9		
				2	5	.	3	9	

5 9,832 ÷10 = 983.2

Thousands			Ones			Decimal Point	Decimals		
Hundreds	Tens	Ones	Hundreds	Tens	Ones		Tenths	Hundredths	Thousandths
		9	8	3	2	.			
			9	8	3	.	2		

2 Complete the following:

1. The value of 9.25 increased when multiplying by 10 to ...92.5... .
2. The value of ...0.857... increased when multiplying by 10 to 8.57.
3. The value of 36.6 increased when multiplying by 10 to 366.
4. The value of 0.25 decreased when dividing by 10 to ...0.025... .
5. The value of ...248... decreased when dividing by 10 to 24.8.
6. The value of 1.25 decreased when dividing by 10 to 0.125.
7. 893 ÷ 10 = ...89.3...
8. 6.38 ÷ 10 = ...0.638...
9. ...27... ÷ 10 = 2.7
10. 458.36 X 10 = ...4,583.6...
11. ...2.5... X 10 = 25
12. 3,000 + 500 + 0.8 + 0.07 + 0.006 = ...3,500.876
13. 25 + 0.025 = ...25.025...
14. 200 + 30 + 5 + 0.48 = ...235.48...
15. 63 + 0.025 = ...63.025...
16. 43.043 = 43 + ...0.043...
17. 8,258.36 = 8,000 + 200 + 50 + 8 + ...0.36...
18. 95.905 = ...90 + 5 + 0.9 + 0.005... **(In expanded form)**
19. 85.36 = ...8... Tens + ...5... Ones + ...3... Tenths + ...6... Hundredths
20. ...50.05... = 5 Tens + 5 Hundredths

3 Choose the correct answer:

1. The value of ...2.526... increased when multiplying by 10 to 25.26.
   (25.26 or 252.6 or 2.526 or 2,526)
2. The value of ...0.26... decreased when dividing by 10 to 0.026.
   (0.026 or 0.26 or 2.6 or 26)
3. ...25.8... X 10 = 258 (2580 or 258 or 25.8 or 2.58)
4. 45 X 10 = ...450... (450 or 0.45 or 4.5 or 40.5)
5. 8.05 ÷ 10 = ...0.805... (805 or 8.5 or 80.5 or 0.805)
6. When all digits of a number move one place to the left, its value
   increases. (decreases or increases or does not change or other)

7 When all digits of a number move one place to the ......right......, its value decreases. (right or left or other)

8 23 + 0.02 + 0.003 = ...23.023... (2,302,00 or 2,323 or 23.023 or 23.23)

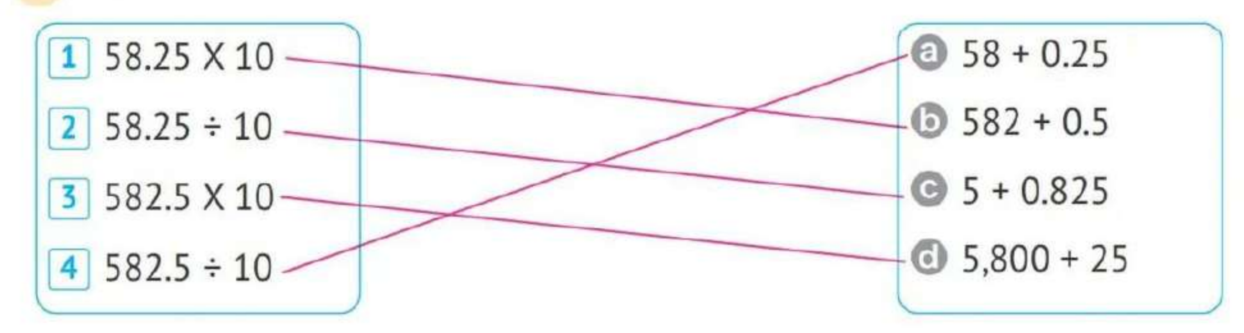
9 824.12 = 824 + 0.12

(824 + 1 + 2 or 824 + 12 or 824 + 0.12 or 800 + 200 + 4 + 10 + 2)

10 When 56.73 is multiplied by 10, the value of the digit 7 ....

(does not change or increases from 0.7 to 7 or increases from 70 to 700 or decreases from 0.7 to 0.07)

4 Match:



5 Put 0.578 in the table, then multiply the result by 10 and complete:

Whole Number						Decimal Point	Decimals		
Thousands			Ones						
Hundreds	Tens	Ones	Hundreds	Tens	Ones		Tenths	Hundredths	Thousandths
					0	.	5	7	8
					5	.	7	8	

1 The value of ......5...... (increased/decreased) when multiplying by 10 from ....0.5.... to ....5.... .

2 The value of ......7...... (increased/decreased) when multiplying by 10 from ....0.07.... to ....0.7.... .

3 The value of ......8...... (increased/decreased) when multiplying by 10 from ....0.008.... to ....0.08.... .

4 Therefore, the value of the whole number ....0.578.... (increased/decreased) by a factor of **10** from ....0.578.... to ....5.78...., **so** ....0.578.... X ....10.... = ...5.78....

Assessment 2 on Lessons 2&3

Unit 1

First: **Choose the correct answer:**

1. The value of **45.26** increases when multiplying by 10 to 452.6
   - (a) 4,526
   - (b) 4.526
   - (c) 452.6
   - (d) 450.26
2. The value of 752.8 decreases when dividing by 10 to **75.28**
   - (a) 752.8
   - (b) 7.528
   - (c) 750.28
   - (d) 75.028
3. 400 + 50 + 0.2 + 0.004 = 450.204
   - (a) 450.24
   - (b) 450.024
   - (c) 450.204
   - (d) 45.204
4. 20.05 = 20 + 0.05
   - (a) 20 + 5
   - (b) 200 + 0.5
   - (c) 2 + 0.005
   - (d) 20 + 0.05
5. 85 ÷ 10 = 8.5
   - (a) 8.5
   - (b) 0.85
   - (c) 0.085
   - (d) 850

Second: **Complete the following:**

1. The value of 3.927 increases when multiplying by 10 to 39.27.
2. The value of 270 is decreased when multiplying by 0.1 to 27 .
3. 45.012 = 45 + 0.012
4. 500 + 20 + 3 + 0.8 + 0.07 + 0.006 = 523.876
5. 459 ÷ 10 = 45.9

Third: **Match:**

1. 78 X 10	(a) 7.8
2. 78 ÷ 10 = ...	(b) 70.8
3. 70 + 0.8 = ...	(c) 780
4. 7 + 0.08 = ...	(d) 70.08
5. 70 + 0.08 = ...	(e) 7.08

Theme 1

Lessons 4&5 Comparing Decimals / Rounding Decimals

1 Complete using (<, = or >):

1	456.25	>	45.625	2	79.02	<	790.2
3	42.9	=	42.900	4	12.500	>	12.050
5	98.78	<	103.5	6	90.05	<	900.5
7	8.5 X 10	>	85 ÷ 10	8	9.08 X 10	>	9.08 ÷ 10
9	0.5 X 10	<	50	10	85.03	=	80 + 5 + 0.03
11	75 + 0.05	<	75.50				

12. 107.05 > One hundred and seventy-five hundredths
13. 800,008.3 < Eight hundred eight thousand and three tenths
14. 700,050,005.50 = Seven hundred million, fifty thousand, five and fifty hundredths
15. 400 + 4 + 0.4 + 0.004 > Four hundred four and four hundred thousandths

2 Circle the greatest number:

1. 27.03 , **270.3** , 2.703
2. 56.38 , 56.038 , **560.38**
3. 180.06 , 18.006 , **180.60**
4. **900.900** , 900.090 , 900.009

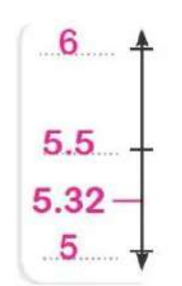
3 Circle the smallest number:

1. **100.50** , 105.05 , 150.05
2. 900.25 , **90.025** , 902.05
3. 1,000.02 , 100,200 , **100.002**
4. **8.237** , 80.237 , 802.037

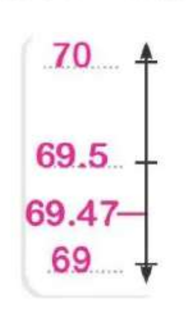
4 Round each of the following using the midpoint strategy:

1 To the nearest whole number:

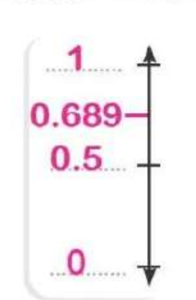
ⓐ 5.32 ≈ 5



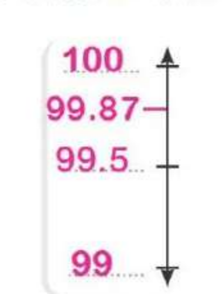
ⓑ 69.47 ≈ 69



ⓒ 0.689 ≈ 1

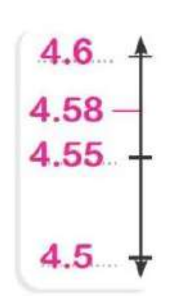


ⓓ 99.87 ≈ 100

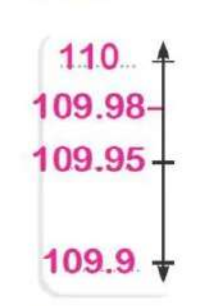


2 To the nearest Tenth:

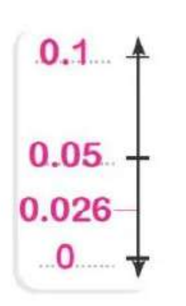
ⓐ 4.58 ≈ 4.6



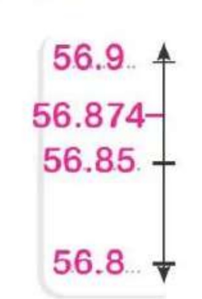
ⓑ 109.98 ≈ 110



ⓒ 0.026 ≈ 0

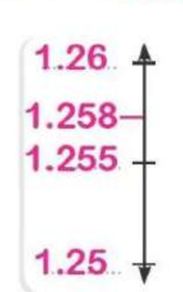


ⓓ 56.874 ≈ 56.9

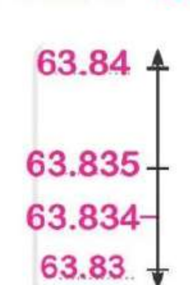


3 To the nearest Hundredth:

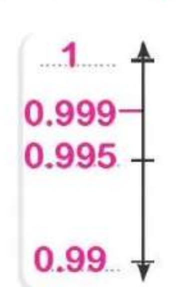
ⓐ 1.258 ≈ 1.26



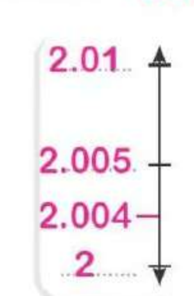
ⓑ 63.834 ≈ 63.83



ⓒ 0.999 ≈ 1

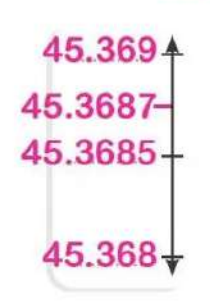


ⓓ 2.004 ≈ 2.00

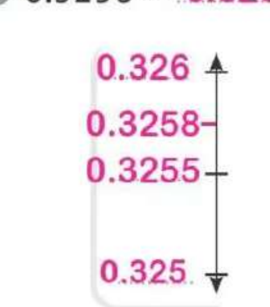


4 To the nearest Thousandth:

ⓐ 45.3687 ≈ 45.369



ⓑ 0.3258 ≈ 0.326



ⓒ 0.9999 ≈ 1



5 Round each of the following numbers using the rounding rule strategy:

1 To the nearest whole number:

- ⓐ 5.28 ≈ 5
- ⓑ 9.38 ≈ 9
- ⓒ 0.368 ≈ 0
- ⓓ 0.983 ≈ 1
- ⓔ 12.5 ≈ 13
- ⓕ 69.58 ≈ 70
- ⓖ 100.7 ≈ 101
- ⓗ 999.9 ≈ 1000
- ⓘ 53.248 ≈ 53

2 To the nearest Tenth:

- ⓐ 23.54 ≈ 23.5
- ⓑ 4.258 ≈ 4.3
- ⓒ 0.97 ≈ 1.0
- ⓓ 18.329 ≈ 18.3
- ⓔ 1.25 ≈ 1.3
- ⓕ 3.678 ≈ 3.7
- ⓖ 200.03 ≈ 200.0
- ⓗ 59.97 ≈ 60.0
- ⓘ 0.024 ≈ 0

3 To the nearest Hundredth:

- ⓐ 7.258 ≈ 7.26
- ⓑ 69.358 ≈ 69.36
- ⓒ 0.293 ≈ 0.29
- ⓓ 0.983 ≈ 0.98
- ⓔ 0.125 ≈ 0.13
- ⓕ 75.075 ≈ 75.08
- ⓖ 4.007 ≈ 4.01
- ⓗ 9.995 ≈ 10.00
- ⓘ 20.002 ≈ 20.00

4 To the nearest Thousandth:

- ⓐ 25.3697 ≈ 25.370
- ⓑ 2,258.3645 ≈ 2,258.365
- ⓒ 100.0027 ≈ 100.003
- ⓓ 3.0223 ≈ 3.022
- ⓔ 0.0257 ≈ 0.026
- ⓕ 9.9999 ≈ 10

6 Complete the following:

1. 236.89 ≈ 237 (To the nearest Ones)
2. 0.258 ≈ 0.3 (To the nearest one decimal place)
3. 45.269 ≈ 45.27 (To the nearest 0.01)
4. 5.2423 ≈ 5.242 (To the nearest $\frac{1}{1,000}$)
5. 56.289 ≈ 56.3 (To the nearest Tenth)
6. 0.368 ≈ 0.37 (To the nearest ....) Hundredth
7. 0.909 ≈ 1 (To the nearest ....) whole number
8. 56.28 X 10 = 562.8 ≈ 563 (To the nearest whole number)
9. 56.234 ÷ 10 = 5.6234 ≈ 5.62 (To the nearest two decimal places)
10. $5.7 < 5.72 < 5.8$ [answers may vary]

7 Choose the correct answer :

1. 56.73 < ......56.8...... (56.69 or **56.8** or 56.075 or 56.729)
2. 98.25 > ......98.205...... (100.05 or 98.52 or 98.263 or **98.205**)
3. 56.5 X 10 > 565 ÷ 10 (< or = or **>** or ≤)
4. 0.32 X 10 > 3.2 ÷ 10 (< or = or **>** or ≤)
5. 56 < ......56.02...... < 57 (562 or 57.3 or 5.6 or **56.02**)
6. ......2.456...... ≈ 2.5 (To the nearest 0.1)

   (2.445 or **2.456** or 0.536 or 2.05)
7. ......69.45...... ≈ 69 (**To the nearest whole number**)

   (69.5 or 68.4 or 68.369 or **69.45**)
8. 56.298 ≈ 56.30 (**To the nearest** ......0.01......)

   (100 or 10 or **0.01** or whole number)
9. 63.245 ≈ 60 (**To the nearest** ......10......)

   (0.01 or 0.1 or **10** or whole number)
10. 56 + 0.02 + 0.007 ≈ ......56.03...... (**To the nearest two decimal places**)

    (56.2 or 56.3 or 56.02 or **56.03**)

8 Arrange the following numbers:

1. 56.25 , 56.52 , 56.025 , 56.502 , 56.052 (**Ascendingly**)

   ...56.025... ، ...56.052... ، ...56.25... ، ...56.502... ، ...56.52...
2. 6.005 , 5.006 , 50.06 , 60.05 , 5.060 (**Descendingly**)

   ...60.05... ، ...50.06... ، ...6.005... ، ...5.060... ، ...5.006...

Assessment 3 on Lessons 4&5

Unit 1

First: Choose the correct answer:

1. 45 + 0.5 **<** 450 + 0.05
   - (a) [<] (b) > (c) = (d) ≤
2. **75.34** ≈ 75.3 (To the nearest Tenth)
   - (a) 75.03 (b) 75.39 (c) 750.3 (d) [75.34]
3. 78.098 ≈ **78** (To the nearest whole number)
   - (a) 78.1 (b) [78] (c) 79 (d) 7
4. 68.567 ≈ 68.57 (To the nearest **Hundredth**)
   - (a) whole number (b) Tenth (c) [Hundredth] (d) Thousandth
5. **20.024** ≈ 20.02 (To the nearest Hundredth)
   - (a) 20.002 (b) [20.024] (c) 0.025 (d) 20.200

Second: Round the following numbers:

1. 458.025 ≈ **458.03** (To the nearest Hundredth)
2. 458.025 ≈ **458** (To the nearest Tenth)
3. 458.025 ≈ **458** (To the nearest whole number)
4. 458.025 ≈ **460** (To the nearest Ten)
5. 458.025 ≈ **500** (To the nearest Hundred)

Third: Compare using (<, = or >):

1. 40.02 **<** 400 + 2
2. 50.600 **>** 5.006
3. 500 + 90 + 3 + 0.8 + 0.07 **=** 593.87
4. 300.03 **<** Three hundred and three tenths
5. 25 + 0.03 + 0.008 **<** Twenty-five and eighty-three hundredths

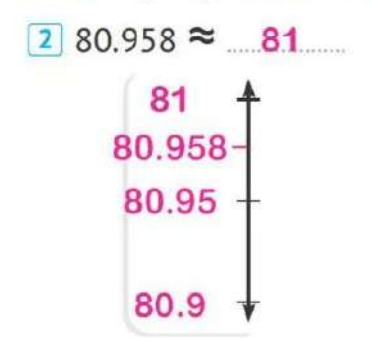
Fourth: Label the midpoint of the number line. Place the given decimal number at its proper location, and then round:

1. 65.25 ≈ **65**

   66
   65.5
   65.25
   65

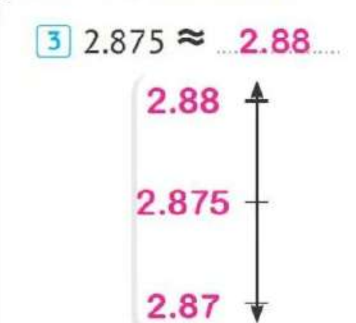
   To the nearest whole number

2. 80.958 ≈ **81**



   To the nearest Tenth

3. 2.875 ≈ **2.88**



   To the nearest Hundredth

Assessment on Concept 1



Unit 1

First: **Complete the following:**

1. Five milliard, five million, five hundred thousand and five thousandths = 5,005,500,000.005 **(In digits)**
2. The smallest decimal number that can be formed from the digits (9 , 8 , 0 , 5 , 7) up to the Hundredths is ......507.89...... .
3. In 8,567.491, the place value of 9 is Hundredths and its value is ......0.09...... .
4. The value of 586.47 is increased when multiplying by 10 to ......5,864.7...... .
5. 458.025 ≈ ......458.0...... . **(To the nearest Tenth)**

Second: **Choose the correct answer:**

1. The numbers 800,000.08 **(In word form)**: ....
   - a. Eight hundred and eight hundredths
   - b. Eight thousand and eight tenths
   - c. Eight hundred and eight tenths
   - d. Eight hundred thousand and eight hundredths
2. The value of ......752...... is decreased when dividing by 10 to 75.2.
   - a. 7,520 b. 7.52 c. 752 d. 75.200
3. 4,000 + 40 + 0.4 + 0.04 = ...4,040.44......
   - a. 4,040.44 b. 44.44 c. 444.04 d. 4,400.40
4. ......75.599...... ≈ 75.60 **(To the nearest Hundredth)**
   - a. 75.694 b. 75.607 c. 75.599 d. 75.697

Third: **Compare using (<, = or >):**

1. 247.089 < 247.1
2. 45.25 < 45 + 25
3. 202.25 > 20.225
4. 20.05 = 20 + 0.05
5. 1,000 + 50 + 0.2 + 0.008 < 1,500.280

Fourth: **Match:**

1. Three thousand and three thousandths = ...
2. 150 Thousandths = ...
3. 400 + 20 + 0.1 + 0.008 = ...
4. 45.95 X 10 = ...
5. 19.999 ≈ .... **(To the nearest Hundredth)**

- a. 0.15 (2)
- b. 3,000.003 (1)
- c. 20 (5)
- d. 420.108 (3)
- e. 459.5 (4)

Fifth: **Answer the following:**

Mazen is planning a trip from Cairo to El Fayoum. He will travel **147.72** kilometers. Round the distance to the nearest whole number. ......147.72 ≈ 148 Kilometers......

Concept 1.2 Adding and Subtracting Decimals

Lessons 6&7 Estimating Decimal Sums / Modeling Decimal Addition

1 **Estimate the sum of each of the following: (To the nearest Tenths)**

[1] Using rounding strategy:

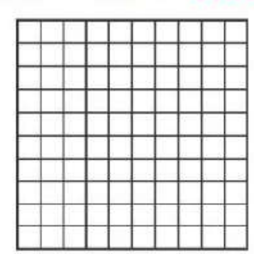
ⓐ 56.35 + 25.04 56.4 + 25 ≈ 81.4	ⓑ 6.358 + 15.25 6.4 + 15.3 ≈ 21.7	ⓒ 74.82 + 26.17 74.8 + 26.2 ≈ 101
ⓓ 8.25 + 0.999 8.3 + 1 ≈ 9.3	ⓔ 63.25 + 7.76 63.3 + 7.8 = 71.1	ⓕ 96.35 + 69.5 96.4 + 69.5 ≈ 165.9

[2] Using benchmark decimals strategy:

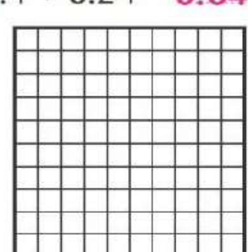
ⓐ 0.92 + 0.56 1 + 0.5 ≈ 1.5	ⓑ 25.96 + 3.4 26 + 3.5 ≈ 29.5	ⓒ 6.9 + 3.02 7 + 3 ≈ 10
ⓓ 0.79 + 2.03 1 + 2 ≈ 3	ⓔ 4.7 + 9.05 4.5 + 9 ≈ 13.5	ⓕ 6.01 + 4.53 6 + 4.5 ≈ 10.5

2 **Add using the decimal model:**

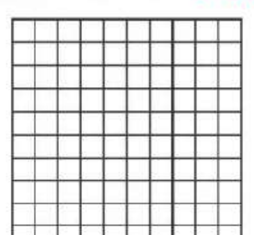
[1] 0.12 + 0.56 = 0.68



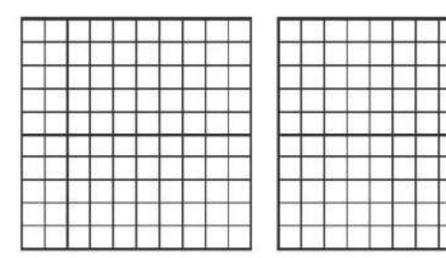
[2] 0.4 + 0.24 = 0.64



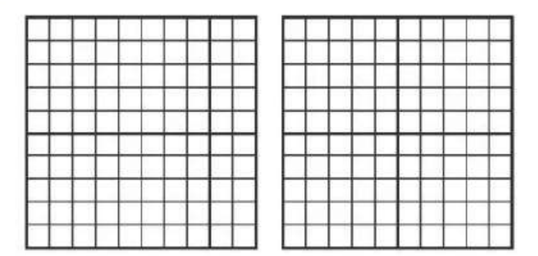
[3] 0.15 + 0.45 = 0.60



[4] 0.75 + 0.68 = 1.43



[5] 0.85 + 0.78 = 1.63



3 Add using the place value table:

1 456.25 + 23.028 = 479.278

Thousands			Ones			Decimal Point	Decimals		
Hundreds	Tens	Ones	Hundreds	Tens	Ones		Tenths	Hundredths	Thousandths
			4	5	6	.	2	5	
				2	3	.	0	2	8
			4	7	9	.	2	7	8

2 69,586.35 + 892 .9 = 70,479.25

Thousands			Ones			Decimal Point	Decimals		
Hundreds	Tens	Ones	Hundreds	Tens	Ones		Tenths	Hundredths	Thousandths
	6	9	5	8	6	.	3	5	
			8	9	2	.	9		
	7	0	4	7	9		2	5	

3 32.56 + 1,856.996 = 1,889.556

Thousands			Ones			Decimal Point	Decimals		
Hundreds	Tens	Ones	Hundreds	Tens	Ones		Tenths	Hundredths	Thousandths
				3	2	.	5	6	
		1	8	5	6	.	9	9	6
		1	8	8	9		5	5	6

4 32,650.28 + 63,984.105 = 96,634.385

Thousands			Ones			Decimal Point	Decimals		
Hundreds	Tens	Ones	Hundreds	Tens	Ones		Tenths	Hundredths	Thousandths
	3	2	6	5	0	.	2	8	
	6	3	9	8	4	.	1	0	5
	9	6	6	3	4		3	8	5

5 69,245.7 + 36.578 = 69,282.278

Thousands			Ones			Decimal Point	Decimals		
Hundreds	Tens	Ones	Hundreds	Tens	Ones		Tenths	Hundredths	Thousandths
	6	9	2	4	5	.	7		
				3	6	.	5	7	8
	6	9	2	8	2		2	7	8

4 Find the result:

1 56.458 + 7.58 = 64.038

2 483.258 + 736.27 = 1,219.528

3 82.025 + 129.975 = 212.000

4 0.369 + 12.57 = 12.939

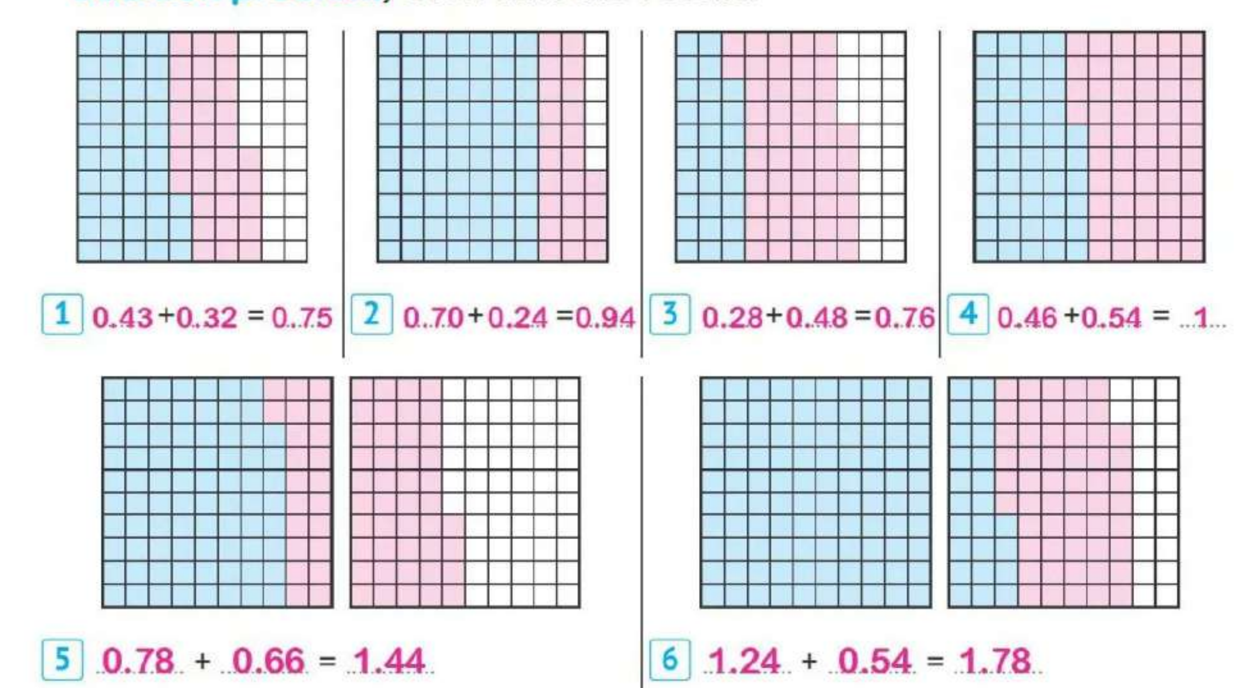
5 56.367 + 56,246.34 = 56,302.707

6 56.31 + 8,000.249 = 8,056.559

7 39.56 + 245.36 = 284.92

8 638.47 + 56,324.98 = 56,963.45

5 Write an expression to match the following models, and write an addition problem, then find the result:



1 0.43 + 0.32 = 0.75

2 0.70 + 0.24 = 0.94

3 0.28 + 0.48 = 0.76

4 0.46 + 0.54 = 1

5 0.78 + 0.66 = 1.44

6 1.24 + 0.54 = 1.78

6 Complete the following:

1 7 Thousandths + 8 Thousandths = 15 Thousandths

2 45 Thousandths + 15 Thousandths = 60 Thousandths

3 456 Thousandths + 265 Thousandths = ...721... Thousandths

4 5 Hundredths + 68 Thousandths = ...118... Thousandths

5 15 Hundredths + 28 Hundredths = ...430... Thousandths

7 Complete the following:

1 The benchmark decimal closest to 0.99 is ......1......

2 The benchmark decimal closest to 0.001 is ......0......

3 The benchmark decimal closest to 1.57 is ......1.5......

4 The estimate of the sum of 56.36 + 57.63 using rounding to the nearest 0.1 strategy is ...114...

5 The estimate of the sum of 7.59 + 3.89 using rounding to the nearest whole number is ...12...

6 15 Hundredths + 37 Hundredths = ...52... Hundredths

7 5 Tenths + ...6...... Hundredths = 560 Thousandths

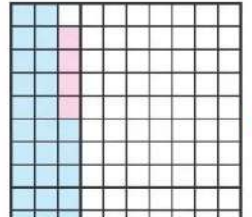
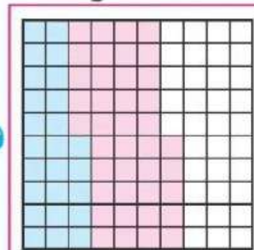
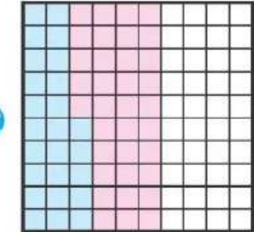
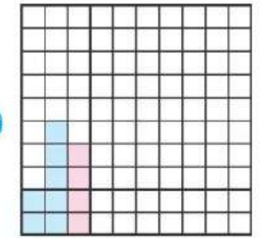
8 45.36 + 12.43 = 57.79

9 0.45 + ...0.55... = 1

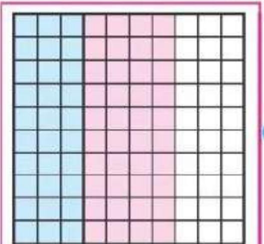
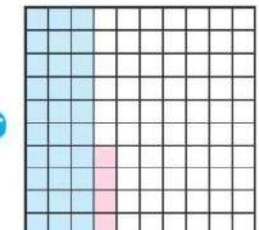
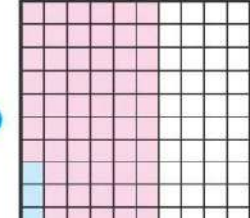
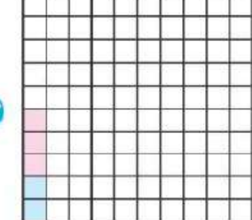
10 0.2 + 0.5 + ...1.3... = 2

8 Choose the correct answer:

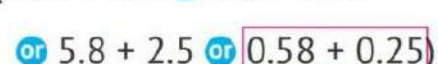
1 The model representing the addition problem 0.25 + 0.4 is Second model

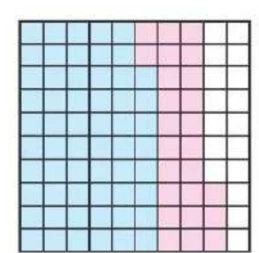

or

or

or


2 The model representing the addition problem 0.3 + 0.4 is First model


or

or

or


3 The addition problem that represents the opposite model is **0.58 + 0.25** (0.58 + 2.5 or 5.8 + 0.25


or 5.8 + 2.5 or [0.58 + 0.25])



4 The addition problem that represents the following model is **0.9 + 0.48**.
(0.09 + 0.48 or [0.9 + 0.48]
or 90 + 48 or 0.9 + 4.8)

5 The benchmark decimal closest to 0.45 is **0.5** . (0 or [0.5] or 1 or 1.5)

6 The benchmark decimal closest to 2.01 is **2** . (1 or 1.5 or [2] or 2.5)

7 The estimate of the sum of 3.752 + 2.358 using rounding to the nearest 0.01 strategy is **6.11** . (5 or 6.1 or 6.2 or [6.11])

8 4 Tenths + 3 Thousandths = **403** Thousandths (0.403 or 7 or 43 or [403])

9 0.7 + 1.2 + **0.1** = 2 (1.9 or 1.1 or [0.1] or 0.3)

10 0.256 + **0.744** = 1 (0.854 or 1.744 or 0.8 or [0.744])

9 Answer the following:

1 Malak wants to cycle **40** km in a week. By Thursday, Malak had covered **34.99** km, and on Friday she had covered **4.01** km.
Did Malak achieve her goal or not? (Show your steps)
34.99 + 4.01 = 39.00 < 40 **No, Malak didn't achieve her goal.**

2 A merchant bought **953.543** kilograms of fruits. The next day, he bought **240.615** kilograms. Estimate the total amount bought by the merchant in the two days. Use the strategy of rounding to the nearest 0.1.
Total = 953.5 + 240.6 = 1,194.1 kg .

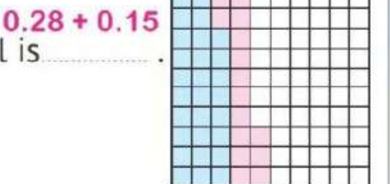
3 Fayrouz has **5** meters of fabric. If she needs **3.75** meters to make a dress, and **1.23** meters to make pants, estimate the length of the fabric that Fayrouz needs. Use the strategy of rounding to the nearest whole number. Is the fabric that she has enough or not?
4 + 1 = 5 Yes, the fabric she has is enough. .

Assessment 4 on Lessons 6&7

Unit 1

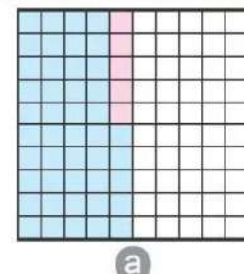
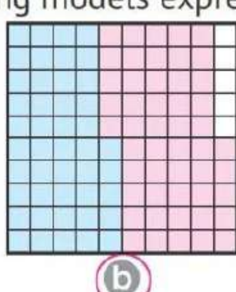
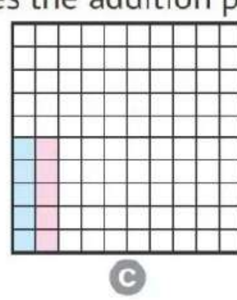
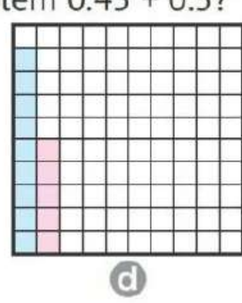
First: **Choose the correct answer:**

1 The expression that expresses the corresponding model is 0.28 + 0.15 .



ⓐ 0.28 + 0.15 ⓑ 2.8 + 1.5
ⓒ 2.8 + 0.15 ⓓ 0.28 + 1.5

2 Which of the following models expresses the addition problem 0.45 + 0.5?

ⓐ ⓑ ⓒ ⓓ

3 5.25 + 32.7 = 37.95

ⓐ 37.92 ⓑ 8.52 ⓒ 85.2 ⓓ 37.95

4 0.75 + 0.25 = 1

ⓐ 1.25 ⓑ 0.25 ⓒ 0.35 ⓓ 1.75

5 65.5 + 5 = 70.5

ⓐ 66 ⓑ 70.5 ⓒ 65.55 ⓓ 655.5

Second: **Complete the following:**

1 The estimated sum of 4.6 + 5.3 using rounding to the nearest whole number strategy is 5 + 5 = 10

2 The estimated sum of 6.12 + 3.28 using rounding to the nearest Tenth strategy is 9.4

3 4 Hundredths + 27 Thousandths = 67 Thousandths

4 452.8 + 2.782 = 455.582



5 0.38 + 0.62 = 1

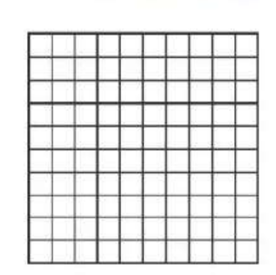
Third: **Match:**

1 3.5 + 2.5	ⓐ 0.6 (2)
2 0.35 + 0.25 =	ⓑ 2.85 (3)
3 0.35 + 2.5 =	ⓒ 6 (1)
4 3.5 + 0.25 =	ⓓ 60 (5)
5 35 + 25 =	ⓔ 3.75 (4)

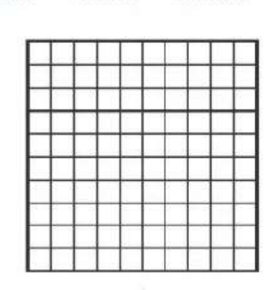
Lessons 8–11 Modeling Subtracting Decimals, Estimating Decimal Differences Subtracting to the Thousandths Place Decimal Story Problems

1 Subtract using the decimal model:

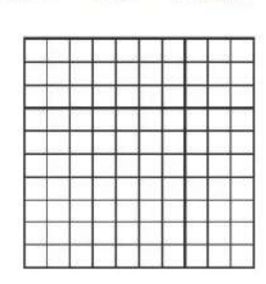
1 0.45 – 0.27 = 0.18



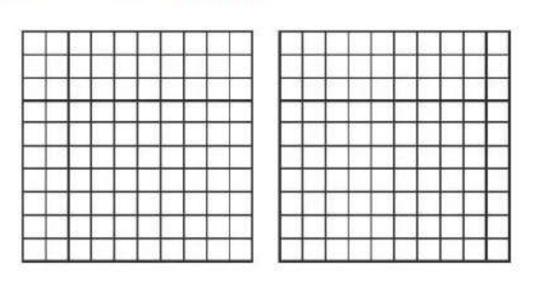
2 0.8 – 0.39 = 0.41



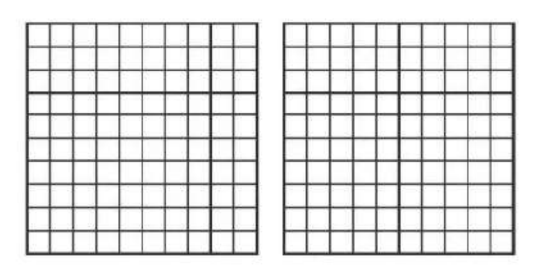
3 0.78 – 0.5 = 0.28



4 1.5 – 0.82 = 0.68



5 1.35 – 0.9 = 0.45



2 Subtract using the place value table:

1 563.45 – 158.23 = 405.22

Thousands			Ones			Decimal Point	Decimals		
Hundreds	Tens	Ones	Hundreds	Tens	Ones		Tenths	Hundredths	Thousandths
			5	6	3	.	4	5	
			1	5	8	.	2	3	
			4	0	5	.	2	2	

2 700.25 – 56.258 = 643.992

Thousands			Ones			Decimal Point	Decimals		
Hundreds	Tens	Ones	Hundreds	Tens	Ones		Tenths	Hundredths	Thousandths
			7	0	0	.	2	5	
				5	6	.	2	5	8
			6	4	3	.	9	9	2



3 45.369 – 9.98 = 35.389

Thousands			Ones			Decimal Point	Decimals		
Hundreds	Tens	Ones	Hundreds	Tens	Ones		Tenths	Hundredths	Thousandths
				4	5	.	3	6	9
					9	.	9	8	
				3	5	.	3	8	9

4 56.023 – 9.88 = 46.143

Thousands			Ones			Decimal Point	Decimals		
Hundreds	Tens	Ones	Hundreds	Tens	Ones		Tenths	Hundredths	Thousandths
				5	6	.	0	2	3
					9	.	8	8	
				4	6	.	1	4	3

5 1,250 – 889.56 = 360.44

Thousands			Ones			Decimal Point	Decimals		
Hundreds	Tens	Ones	Hundreds	Tens	Ones		Tenths	Hundredths	Thousandths
		1	2	5	0	.			
			8	8	9	.	5	6	
			3	6	0	.	4	4	

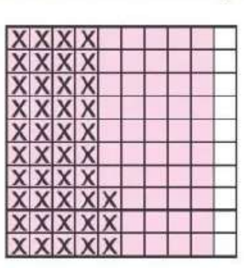
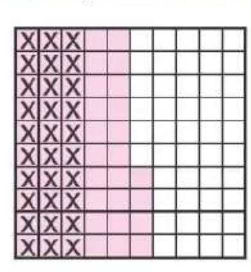
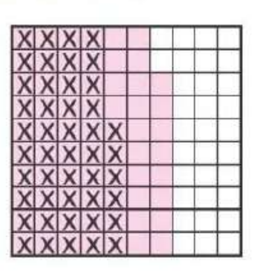
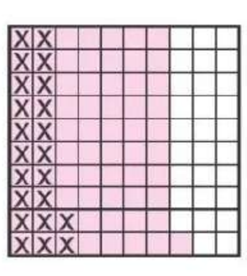
6 56,025.35 – 9,258.9 = 46,766.45

Thousands			Ones			Decimal Point	Decimals		
Hundreds	Tens	Ones	Hundreds	Tens	Ones		Tenths	Hundredths	Thousandths
	5	6	0	2	5	.	3	5	
		9	2	5	8	.	9		
	4	6	7	6	6	.	4	5	

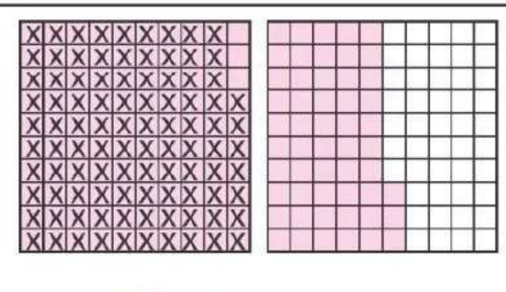
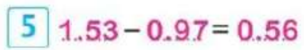
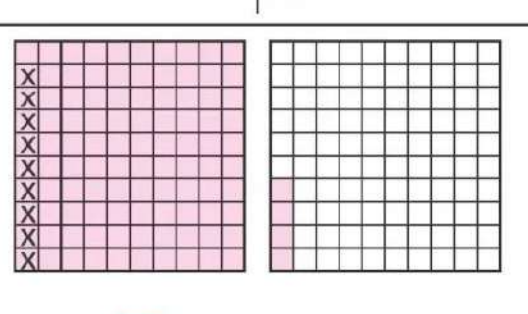
3 Find the result:

1. 70.4 – 9.59 = 60.81
2. 523.147 – 92.57 = 430.577
3. 802.1 – 157.637 = 644.463
4. 5.105 – 0.89 = 4.215
5. 900.25 – 56 = 844.25
6. 87.025 – 15.98 = 71.045
7. 39.56 – 24.36 = 15.2
8. 21,000 – 23.45 = 20,976.55

4 **Write an expression to match the following models, and write the subtraction problem, then find the result:**

1 0.90 − 0.43 = 0.47
2 0.54 − 0.30 = 0.24
3 0.68 − 0.46 = 0.22
4 0.71 − 0.22 = 0.49

5 1.53 − 0.97 = 0.56
6 1.04 − 0.09 = 0.95

5 **Estimate the difference of each of the following:**

1 Using rounding to the nearest Tenth strategy:

a) 75.02 – 27.18 Estimate 75 – 27.2 = 47.8
b) 9.235 – 5.2 Estimate 9.2 – 5.2 = 4
c) 25,152.24 – 105.45 Estimate 25,152.2 – 105.5 = 25,046.7
d) 45.258 – 7.39 Estimate 45.3 – 7.4 = 37.9
e) 56.321 – 9.8 Estimate 56.3 – 9.8 = 46.5
f) 765.3 – 7.589 Estimate 765.3 – 7.6 = 757.7

2 Using benchmark decimals strategy:

a) 0.99 – 0.51 Estimate 1 – 0.5 = 0.5
b) 25.01 – 3.45 Estimate 25 – 3.5 = 21.5
c) 8.9 – 2.001 Estimate 9 – 2 = 7
d) 1.98 – 0.53 Estimate 2 – 0.5 = 1.5
e) 7.01 – 0.65 Estimate 7 – 0.5 = 6.5
f) 15.01 – 7.96 Estimate 15 – 8 = 7

6 Complete the following:

1. 79 Thousandths – 15 Thousandths = ...64.......... Thousandths
2. 82 Thousandths – 47 Thousandths = ...35.......... Thousandths
3. 620 Thousandths – 174 Thousandths = ...446.......... Thousandths
4. 14 Hundredths – 37 Thousandths = ...103.......... Thousandths
5. 63 Hundredths – 18 Hundredths = ...450.......... Thousandths
6. 5 Tenths – 24 Thousandths = ...476.......... Thousandths

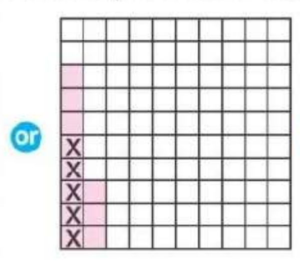
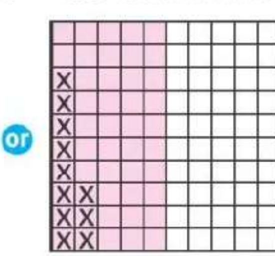
7 Complete the following:

1. The estimate of 56.36 – 14.63 using rounding to the nearest whole number strategy is ....41..... .
2. The estimate of 126.276 – 34.98 using rounding to the nearest $\frac{1}{100}$ strategy is .91.3.... .
3. The estimate of 10.893 – 9.75 using rounding to the nearest 0.1 strategy is ....1.1..... .
4. The estimate of 9.99 – 7.58 using the benchmark decimal strategy is .2.5.. .
5. The estimate of 75.23 – 9.25 using rounding to the nearest Ten ....70..... .
6. 75 Hundredths – 9 Hundredths = ...66... Hundredths
7. 7 Tenths – ....5..... Hundredths = 650 Thousandths
8. 963.16 – 906.81 = 56.35
9. 1 – ..0.55.. = 0.45
10. .48.23 – 12.5 = 35.73

8 Choose the correct answer:

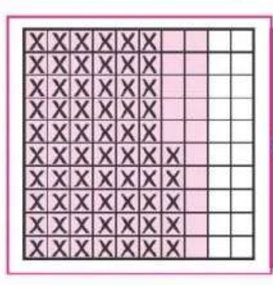
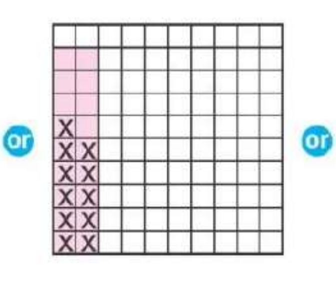
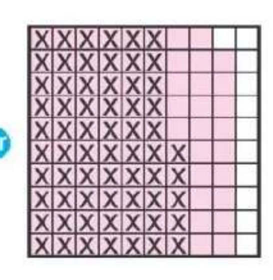
First model

1 The model representing the subtraction problem 0.83 – 0.5 is ....

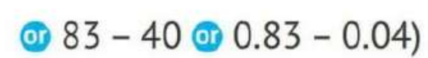
 or  or 

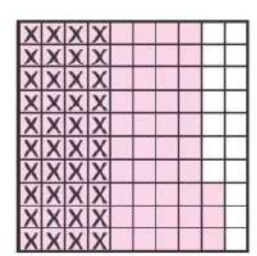
First model

2 The model representing the subtraction problem 0.8 – 0.65 is ....

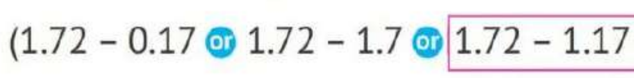
 or  or 

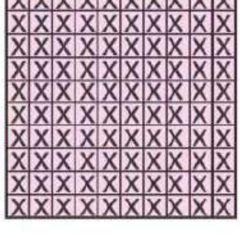
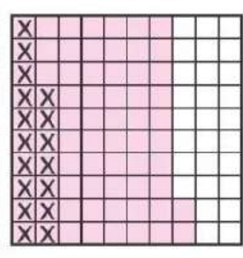
3 The subtraction problem that represents the opposite model is 0.83 – 0.4 (0.83 – 0.4 or 8.3 – 0.4 or 83 – 40 or 0.83 – 0.04)





4 The subtraction problem that represents the opposite model is 1. 72 – 1.17 . (1.72 – 0.17 or 1.72 – 1.7 or 1.72 – 1.17 or 172 – 117)



5 The estimate of 78.089 – 5.247 using rounding to the nearest 0.01 strategy is 72.84 . (72.84 or 72.842 or 72.9 or 65)

6 The estimate of 25.368 – 5.247 using rounding to the nearest 0.1 strategy is 20.2 . (20 or 20.2 or 20.12 or 25.121)

7 The estimate of 86.25 – 14.89 using rounding to the nearest whole number strategy is 71 . (71.36 or 71.4 or 71 or 70)

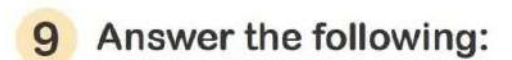
8 3 Tenths − 15 Thousandths = ...285.... Thousandths

(2.85 or **285** or 0.15 or 0.285)



9 12.78 − ....3.98.... = 8.8 (**3.98** or 21.58 or 11.9 or 13.66)

10 1 − ....0.786.... = 0.214 (786 or **0.786** or 1.214 or 0.213)



9 Answer the following:

1 Mohamed had **15,000** pounds. He bought a refrigerator for **7,520.25** pounds, and a washing machine for **5,640.5** pounds. How many pounds are left with Mohamed?

7,520.25 + 5,640.5 = 13,160.75 pounds

15,000 − 13,160.75 = 1,839.25 pounds

2 A road length of **675.5** km, of which the train traveled a distance of **239.47** km. What is the remaining distance from the road?

675.5 − 239.47 = 436.03 km

3 Tamer drinks **1.5** liters of water per day. If he drinks **0.5** liters in the morning and **0.7** liters at lunch, how many liters of water does he drink in the evening?

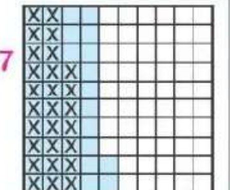
0.5 + 0.7 = 1.2 L.

1.5 − 1.2 = 0.3 L.

Assessment 5 on Lessons 8 – 11

Unit 1

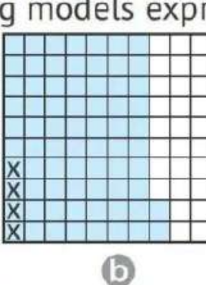
First: **Choose the correct answer:**

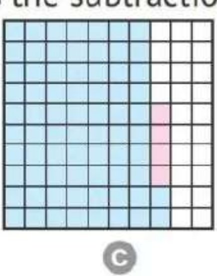


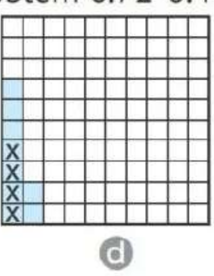
1 The expression that expresses the corresponding model is 0.42 – 0.27

(a) 0.42 – 0.27 (b) 4.2 – 2.7 (c) 4.2 – 0.27 (d) 0.42 – 2.7

2 Which of the following models expresses the subtraction problem 0.72-0.4?







(a) (b) (c) (d)

3 7.15 – 2.6 = 4.55

(a) 4.55 (b) 9.75 (c) 6.09 (d) 7.41

4 1 – 0.53 = 0.47

(a) 1.47 (b) 1.53 (c) 0.53 (d) 0.47

5 8 – 0.45 = 7.55

(a) 8.45 (b) 8.55 (c) 7.45 (d) 7.55

Second: **Complete the following:**

1 The estimated difference of 4.2 – 1.8 using rounding to the nearest whole number strategy is 2 .

2 The estimated difference of 18.46 – 7.25 using rounding to the nearest Tenth strategy is 11.2 .

3 5 Hundredths + 35 Thousandths = 85 Thousandths

4 32.7 + 2.079 = 34.779

5 1 – 0.47 = 0.53

Third: **Match:**

1 15.2 – 5.2 2 1.52 – 0.52 3 15.2 – 0.52 4 152 – 5.2 5 152 – 52

(a) 1 (b) 10 (c) 100 (d) 14.68 (e) 146.8

Fourth:

Emad caught three fish whose lengths were 29.28 cm, 29.255 cm, and 35.17 cm. What is their total length? What is the difference between the longest fish and the shortest fish?

Sum = 29.28 + 29.255 + 35.17 = 93.705 cm

Difference = 35.17 – 29.255 = 5.915 cm

Assessment on Concept 2



Unit 1

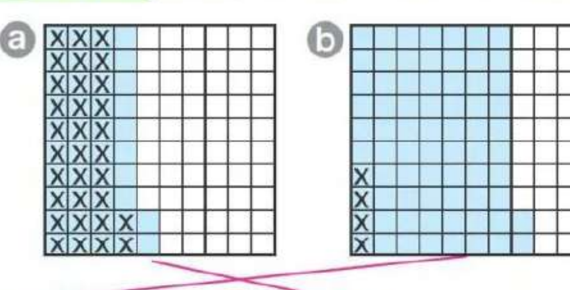
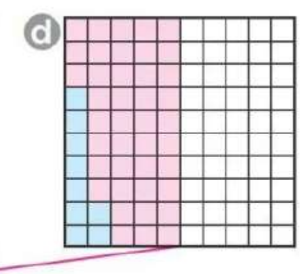
First: Complete the following:

1. The estimated difference of 6.527 – 0.293 using rounding to the nearest Tenth strategy is ....6.2.... .
2. 7 Hundredths + 24 Thousandths = ...94.... Thousandths
3. 45.25 + ...45.25.... = 90.5
4. 59.126 – 42.35 = ...16.776.... .
5. 5 Tenths – 5 Thousandths = ...495.... Thousandths

Second: Choose the correct answer:

1. The expression that expresses the corresponding model is 0.5 – 0.27
   - (a) 0.5 – 0.27
   - (b) 0.5 – 2.7
   - (c) 0.5 + 0.27
   - (d) 0.5 + 27
2. The expression that expresses the corresponding model is 0.22 + 0.30
   - (a) 22 + 30
   - (b) 0.22 – 0.03
   - (c) 2.2 + 3.0
   - (d) 0.22 + 0.30
3. ....3.... – 2.45 = 0.55
   - (a) 3
   - (b) 30
   - (c) 300
   - (d) 0.10
4. 5.456 – 3.456 = ...2....
   - (a) 8.912
   - (b) 200
   - (c) 20
   - (d) 2
5. 3 Tenths – 33 Thousandths = ...267.... Thousandths
   - (a) 0.267
   - (b) 267
   - (c) 2.67
   - (d) 26.7

Third: Match each model to its expression:

1. 0.72 – 0.04
2. 0.42 – 0.32
3. 0.09 + 0.41
4. 0.72 + 0.18

Fourth: Answer the following:

Emad had **56.5** pounds. He bought a pen for **12.25** pounds and a notebook for **15.5** pounds. How much money is left with Emad?

12.25 + 15.5 = 27.75 pounds

56.5 – 27.75 = 28.75 pounds .

Unit 2 Number Relationships

Concept 2.1 Expressions, Equations, and the Real World

Lesson 1 Expressions, Equations, and Variables

1 Choose the correct answer:

1. $45 + y - 2.5$ is a/an ......mathematical expression......

   (variable or mathematical expression or equation or other)

2. $25 + 5.7 \times 2$ is a/an ......mathematical expression......

   (variable or mathematical expression or equation or other)

3. "Ahmed sleeps 7 hours a day." is a/an ......other...... .

   (variable or mathematical expression or equation or other)

4. $12 + 3.7 = y$ is a/an ......equation...... .

   (variable or mathematical expression or equation or other)

5. $8 + x - 7 = 6.7$ is a/an ......equation...... .

   (variable or mathematical expression or equation or other)

6. "The largest 3-digit number is 999." is a/an ......other...... .

   (variable or mathematical expression or equation or other)

7. "Walaa has 1.25 kg of pistachios." is a/an ......other...... .

   (variable or mathematical expression or equation or other)

8. The equation that represents "12.5 plus a number equals 15." is ......$12.5 + x = 15$......

   ($15 - x = 12.5$ or $15 + x = 12.5$ or $12.5 + x = 15$ or $12.5 + 15 = x$)

9. The equation that represents "a minus 12 equals 7.5" is ......$a - 12 = 7.5$......

   ($a - 12 = 7.5$ or $12 - a = 7.5$ or $7.5 - a = 12$ or $12 - 7.5 = a$)

10 In the equation $45 - m = 25$, if 45 represents the number of students in one of the classes and 25 represents the number of girls in this class, then the variable **m** represents the **number of boys**

(number of girls or number of boys or number of students or number of teachers)

11 In the equation $75 - 56.3 = y$, if 75 represents the money that Yassin owns, and 56.3 represents the money he spent, then the variable **y** represents **the money with him now**

(the money with him now or the money he spent or the money he got, or the money that was with him first)

12 Adel is comparing the height of two plants in the garden using this equation: $92.5 - n = 45.5$, where 92.5 is the height of one of them, then the variable **n** in this equation represents **the height of one of the plants**

(the difference between the height of the two plants, or the sum of the height of the two plants, or the height of other plant or Adel's height)

13 The equation $36.5 + 2.15 = y$ is similar to the equation **$2.15 + 36.5 = y$**

($36.5 = y + 2.15$ or $y + 36.5 = 2.15$ or $36.5 - y = 2.15$ or $2.15 + 36.5 = y$)

14 If the dimensions of a rectangle are 5.5 cm and 7.2 cm, then the variable "**p**" in the equation $7.2 + 5.5 + 7.2 + 5.5 = p$ represents the **perimeter** .

(length or width or perimeter or area)

15 Huda bought a pen for 12.5 pounds and a ruler for 3.25 pounds. The equation that represents what Huda paid is **$12.5 + 3.25 = b$**

($3.25 + b = 12.5$ or $12.5 + b = 3.25$ or $12.5 - b = 3.25$ or $12.5 + 3.25 = b$)

2 Read the following story problems. Make an equation for each problem:

1. Hazem has **125** pounds. He bought books for **65.5** pounds.
   What is the remaining money with Hazem?
   $x = 125 - 65.5$

2. A classroom in a school has **21** girls and **15** boys.
   How many students are there in this class?
   $15 + 21 = x$

3. A cattle farm has **90** cows and **75** buffaloes. What is the difference between the number of cows and buffaloes?
   $x = 90 - 75$

4. Mazen is **145** cm tall and his brother Fouad is **20** cm taller than him.
   How tall is Fouad?
   $x = 145 + 20$

5. Two numbers whose sum is **255** and one of them is **107.5**. What is the other number?
   $107.5 + x = 255$

3 Match:

1. The difference between **5.5** and **3.7**	a. $3.7 + 5.5 = y$
2. The sum of **5.5** and **3.7**	b. $3.7 + a = 5.5$
3. **3.7** plus a number equals **5.5**	c. $m - 3.5 = 3.7$
4. **5.5** minus a number equals **3.7**	d. $5.5 - 3.7 = x$
5. A number minus **3.5** equals **3.7**	e. $5.5 - n = 3.7$

(Matched: 1 → d, 2 → a, 3 → b, 4 → e, 5 → c)

Assessment 1 on Lesson 1

Unit 2

First: Choose the correct answer:

1 $5 + x + 3$ is a mathematical expression.

- a) a variable
- **b) a mathematical expression**
- c) an equation
- d) other

2 $7 + 5 = m + 3$ is an equation .

- a) a variable
- b) a mathematical expression
- **c) an equation**
- d) other

3 In the equation **45 + x = 86.** If **86** represents the number of students in one of the classes and **45** represents the number of boys in this class, then, **x** represents the number of girls

- **a) the number of girls**
- b) the number of boys
- c) the number of students
- d) the number of teachers

4 Hussam compared the lengths of two of his colleagues and wrote this equation:

1.52 – 1.25 = y, the letter **y** represents ....

- a) the height of one of his colleagues
- b) the sum of the height of his colleagues
- **c) the difference between the heights of his colleagues**
- d) the height of Hussam

5 The equation that represents the difference between **4.25** and **3.79** is $m = 4.25 - 3.79$

- a) $m = 3.79 + 4.25$
- b) $m - 3.79 = 4.25$
- c) $m - 4.25 = 3.79$
- **d) $m = 4.25 - 3.79$**

Second: Match:

1 The difference between 18.5 **and** 12.5	a) **a** = 18.5 + 12.5
2 The sum of 18.5 **and** 12.5	b) **a** = 18.5 – 12.5
3 12.5 **plus** a number equals 18.5	c) 18.5 – **a** = 12.5
4 18.5 **minus** a number equals 12.5	d) **a** + 12.5 = 18.5
5 A number **plus** 12.5 equals 18.5	e) 12.5 + **a** = 18.5

(Matching lines drawn: 1 → b, 2 → a, 3 → e, 4 → c, 5 → d)

Theme 1

Lessons 2&3 Variables in Equations Telling Stories with Numbers

1 Use mental math to estimate the equations, and then solve them:

1 $2.45 + n = 5.24$ $n = 5.24 - 2.45$ $n = 2.79$	2 $y - 12.40 = 3.01$ $y = 12.4 + 3.01$ $y = 15.41$
3 $8.5 - m = 4.25$ $m = 8.5 - 4.25$ $m = 4.25$	4 $8.12 + x = 20$ $x = 20 - 8.12$ $x = 11.88$
5 $2.30 + 3.10 = 1.50 + v$ $v = [2.3 - 3.1] - 1.5$ $v = 3.9$	6 $2.377 + 3.1 = 1.52 + a$ $a = [2.377 + 3.1] - 1.52$ $a = 3.957$
7 $63 - 15 = p + 10$ $p = [63 - 15] - 10$ $p = 38$	8 $7.5 - 1.5 = d + 5$ $d = [7.5 - 1.5] - 5$ $d = 1$

2 Complete the following:

1. If $2.5 + 3.5 + y = 16$, then $y =$ 10.
2. If $x + 15.2 = 14.5 + 15.5$, then $x =$ 14.8.
3. If $95 - 65.27 = z - 29.73$, then $z =$ 59.46.
4. If $10.5 - 2.5 = a - 8$, then $a =$ 16.
5. If $m = 1.28$, then $m + 37.72 =$ 39.
6. If $b = 3.25$, then $b + 56.75 =$ 60.
7. If $e = 17.102$, then $e - 11.102 =$ 6.
8. If $r = 32.5$, then $48 - r =$ 15.5.

3 Choose the correct answer:

1. If $63.5 + m = 108.5$, then $m =$ ...... 45 .... (45 or 172 or 45.5 or 171.5)
2. If $75.5 - x = 15.5$, then $x =$ ...... 60 .... (91 or 60 or 90.1 or 60.5)
3. If $a - 12.3 = 14.7$, then $a =$ ...... 27 .... (2.4 or 270 or 27 or 24)
4. If $3.45 + y = 7.13 + 2.15$, then $y =$ ...... 5.83 .... (9.28 or 3.68 or 12.73 or 5.83)
5. If $w - 12.5 = 8.5 - 3.5$, then $w =$ ...... 17.5 .... (17.5 or 4 or 7.5 or 9)

4 Write a story problem representing each equation, and then solve it:

1. $9.25 + 2.75 = m$

Morad went to the supermarket, he bought tomatoes for 9.25 and pickles for 2.75.

How much money did Morad pay?

"There are many answers"

2. $x - 125 = 45.8$

Farida had a pocket money, she spent 125 L.E at the toy shop, and the remaining money with her was 45.8 , How much money did she have?

"There are many answers"

Assessment 2 on Lessons 2&3

Unit 2

First: Choose the correct answer:

1 If $78.45 + \mathbf{y} = 90$, then $\mathbf{y} =$ ...... 11.55 ....

ⓐ 78.45 ⓑ 90 ⓒ 168.45 ⓓ 11.55

2 If $12 - \mathbf{m} = 5.125$, then $\mathbf{m} =$ ...... 6.875 ....

ⓐ 12 ⓑ 5.125 ⓒ 6.875 ⓓ 17.125

3 If $2.5 + 3.4 + \mathbf{x} = 7$, then $\mathbf{x} =$ 7 – (2.5 + 3.4)

ⓐ 2.5 + 3.4 + 7 ⓑ 7 – 2.5 + 3.4 ⓒ 7 – (2.5 + 3.4) ⓓ (7 + 2.5) – 3.4

4 If $5.4 + 2.6 = \mathbf{c} - 1.9$, then $\mathbf{c} =$ ...... 9.9 ....

ⓐ 6.1 ⓑ 8 ⓒ 9.9 ⓓ 7.3

Second: Complete the following:

1 If $8.5 + \mathbf{y} = 15$, then $\mathbf{y} =$ ...... 6.5 ....

2 If $2.125 - \mathbf{z} = 6.782 - 6.75$, then $\mathbf{z} =$ ...... 2.093 ....

3 If $\mathbf{m} = 3.25$, then $\mathbf{m} + 3.275 =$ ...... 6.525 ....

Third:

Find the value of the variable (a) in each of the following:

1 $35.2 + a = 63.8$

a = ... 63.8 – 35.2 ......

a = ... 28.6 ......

2 $a - 24.8 = 35.2$

y = ... 24.8 + 35.2 ......

y = ... 60 ......

3 $a + 6.15 = 10$

a = ... 10 – 6.15 ......

a = ... 3.85 ......

4 $45.16 - a = 13.48$

a = ... 45.16 – 13.48 ......

a = ... 31.68 ......

Assessment on Concept 1



Unit 2

First: **Choose the correct answer:**

1. $2.15 + \mathbf{x} = 9.25$ is **an equation**

   (a) a variable (b) a mathematical expression **(c) an equation** (d) other

2. If $28.45 - \mathbf{y} = 15.05$, then $\mathbf{y} =$ **13.40**

   (a) 13.40 (b) 43.50 (c) 28.45 (d) 15.05

3. In the equation $38.50 + \mathbf{x} = 80.25$, if 80.25 represents the amount that Hossam owns and 38.50 represents the amount remaining with him, then **x** represents **the amount he spent**

   (a) the amount he owns (b) the amount he has left
   (c) the amount he spent (d) other

4. The equation that represents the sum of 6.35 **and** 3.14 is **$m = 6.35 + 3.14$**

   (a) $m = 6.35 + 3.14$ (b) $m - 3.14 = 6.35$ (c) $m - 6.35 = 3.14$ (d) $m = 6.35 - 3.14$

Second: **Complete the following:**

1. If $8.5 - y = 1.5 + 6.5$, then $y =$ **0.5** .
2. If $5.52 + 2.01 + x = 9.21$, then $x =$ **1.68** .
3. If $m = 3.01$, then $m - 0.5 =$ **2.51** .
4. $f + 0.28 = 9.07$, then $f =$ **$9.07 - 0.28 = 8.79$**

Third: **Put (✓) or (✗):**

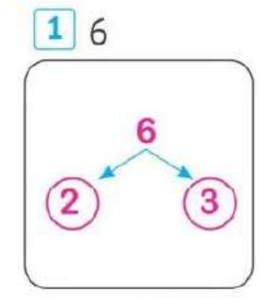
1. "$x + 3.2 = 1.2 + 7.8$" is called a variable. (✗)
2. The equation $7.2 + 1.05 = x$ is similar to the equation $1.05 + 7.2 = y$. (✓)
3. If $5.63 - m = 2.15$, then $m = 5.63 + 2.15$. (✗)
4. The equation that represents the difference between 18.5 and 12.5 is $z - 18.5 = 12.5$. (✗)

Concept 2.2 Factors and Multiples

Lesson 4 Prime Factorization

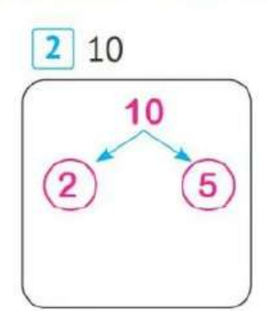
1 Factorize each number into its prime factors using the factor tree:

1. 6



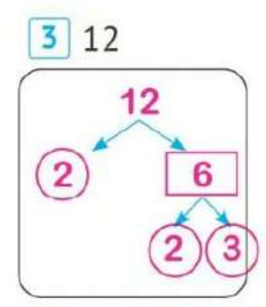
6 = 2 X 3

2. 10



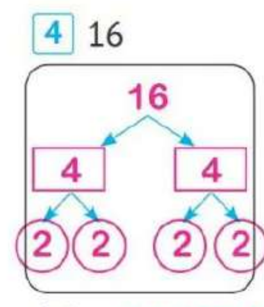
10 = 2 X 5

3. 12



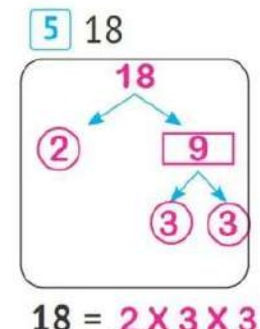
12 = 2 X 2 X 3

4. 16



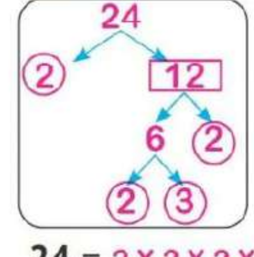
16 = 2 X 2 X 2 X 2

5. 18



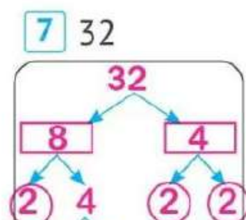
18 = 2 X 3 X 3

6. 24

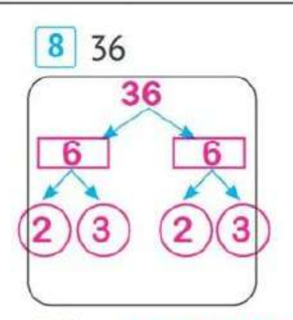
24 = 2 X 2 X 2 X 3

7. 32



32 = 2 X 2 X 2 X 2 X 2

8. 36



36 = 2 X 2 X 3 X 3

2 **Complete the following sentences:**

1. The number of factors of a prime number is ......2...... factors.
2. All prime numbers are odd numbers, except ......2...... which is an even number.
3. ......2...... is the smallest prime number.
4. ......3...... is the smallest odd prime number.
5. ...Prime number... is a number greater than one and has only two factors.
6. The smallest 2-digit prime number is ......11...... .
7. The prime numbers less than 10 are 2, 3, 5, 7.
8. The number of factors of 25 is ......3...... factors.
9. 1, 2, 4, 8, 16 only are the factors of ......16...... .

10 The prime factors of 21 are ....3, 7........

11 2 is a factor of all numbers whose Ones digit is ....0.........., ...2.........., ...4.........., ...6........ or ....8........

12 The number whose prime factors are 2, 3, 3 is ....18.......

3 Choose the correct answer:

1 ....1........ is a factor of all numbers. (0 or 1 or 2 or 3)

2 ....59....... is a prime number. (51 or 52 or 57 or 59)

3 3 and 5 together are prime factors of ....30.........

(30 or 25 or 18 or 53)

4 The prime number .... (has no factors or has one factor only or has two factors only or has three factors only)

5 2, 3, 5, 7 are prime numbers.

(even or odd or prime or composite)

6 The prime factors of 12 are 2 X 2 X 3 (2 x 6 or 3 x 4 or 2 x 2 x 3 or 1 x 12)

7 If the prime factors of a number are 2 X 2 X 2, then the number is ...8...

(8 or 4 or 6 or 222)

4 Put (✓) or (✗):

1 17 is a prime number. (✓)

2 22 is a composite number. (✓)

3 The prime number whose sum of factors is 8 is 7. (✓)

4 The smallest prime number is 1. (✗)

5 All prime numbers are odd numbers. (✗)

6 4 is a prime number because it has more than two factors. (✗)

7 The smallest even prime number is 2. (✓)

8 The smallest odd prime number is 3. (✓)

9 2, 2 and 5 are the prime factors of 10. (✗)

Assessment 3 on Lesson 4

Unit 2

First: **Choose the correct answer:**

1. The number of factors of **16** is ...5... .
   - (a) 3 (b) 4 (c) 5 (d) 6
2. If the all factors of a number are **1, 2, 3, 4, 6, 12**, then its prime factors are ...2 X 2 X 3... .
   - (a) 2 x 2 x 3 (b) 3 x 4 (c) 2 x 6 (d) 1 x 12
3. The **smallest** prime number formed from two digits is ...11... .
   - (a) 2 (b) 10 (c) 11 (d) 12
4. **2** and **7** together are prime factors of ...14... .
   - (a) 72 (b) 14 (c) 27 (d) 9

Second: **Match:**

1. Prime factors of **20**	(a) 2, 3, 5, 7
2. Prime numbers less than **10**	(b) 2, 3, 3
3. Prime factors of **18**	(c) 2, 2, 5

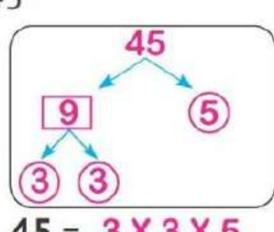
(Matched: 1 → c, 2 → a, 3 → b)

Third: **Complete the following:**

1. All prime numbers are odd numbers, except ...2... is an even number.
2. If **a** X 9 = 36, then **a** = ...4... .
3. The prime factors of 25 are: **25** = ...5 X 5... .
4. A number whose prime factors are **2, 2** and **5** is ...20... .

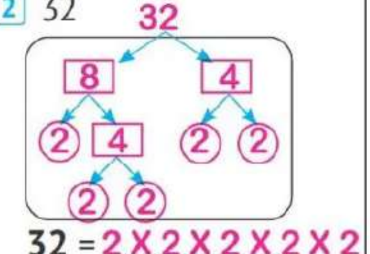
Fourth: **Factorize each number into its prime factors using the factor tree:**

1. 45



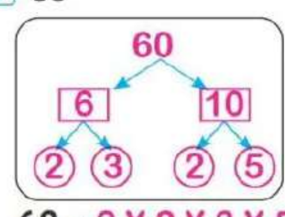
45 = 3 X 3 X 5

2. 32



32 = 2 X 2 X 2 X 2 X 2

3. 60



60 = 2 X 2 X 3 X 5



Lesson 5 Greatest Common Factors (GCF)

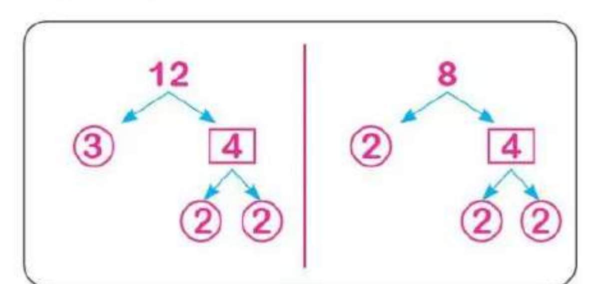
1 Find the greatest common factor (GCF) of each of the following:

1 **12, 8**

12 = 2 X 2 X 3

8 = 2 X 2 X 2

GCF = 2 X 2 = 4

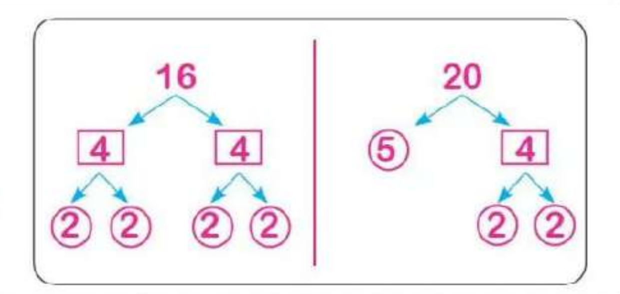


2 **16, 20**

16 = 2 X 2 X 2 X 2

20 = 2 X 2 X 5

GCF = 2 X 2 = 4

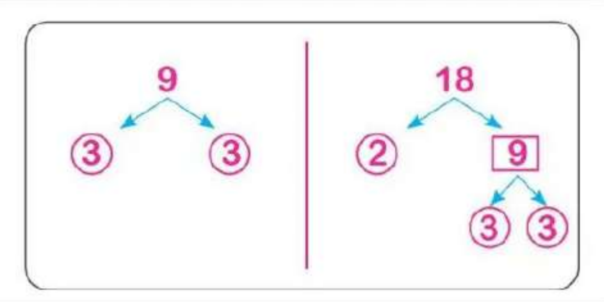


3 **9,18**

9 = 3 X 3

18 = 3 X 3 X 2

GCF = 3 X 3 = 9

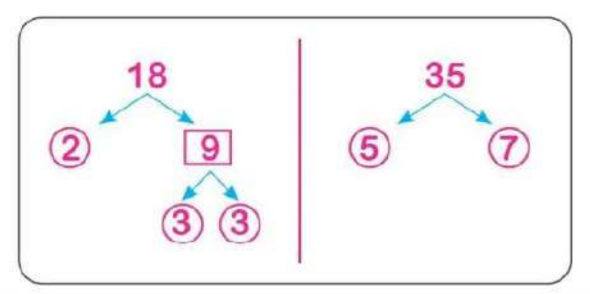


4 **18, 35**

18 = 3 X 3 X 2

35 = 5 X 7

GCF = = 1

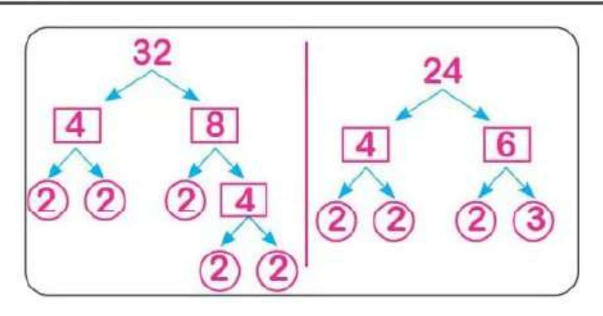


5 **32, 24**

32 = 2 X 2 X 2 X 2 X 2

24 = 2 X 2 X 2 X 3

GCF = 2 X 2 X 2 = 8



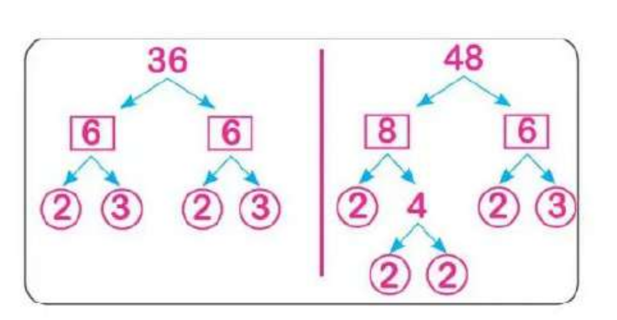


6 **36, 48**

36 = 2 X 2 X 3 X 3

48 = 2 X 2 X 3 X 2 X2

GCF = 2 X 2 X 3 = 12

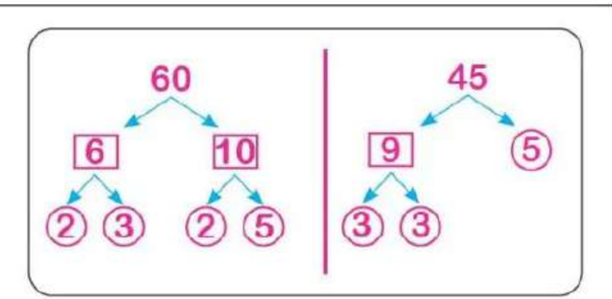


7 **60, 45**

60 = 2 X 2 X 3 X 5

45 = 3 X 5 X 3

GCF = 3 X 5 = 15

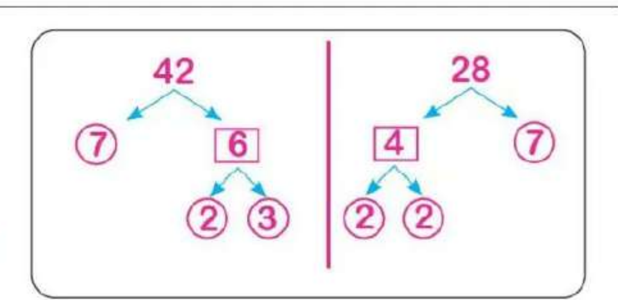


8 **42, 28**

42 = 2 X 3 X 7

28 = 2 X 7 X 2

GCF = 2 X 7 = 14

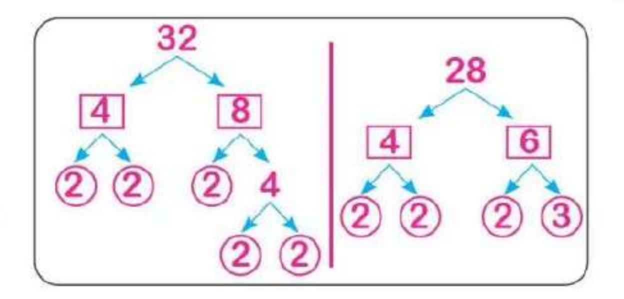


9 **4 X 8 , 6 X 2 X 2**

32 = 2 X 2 X 2 X 2 X 2

24 = 2 X 2 X 2 X 3

GCF = 2 X 2 X 2 = 8

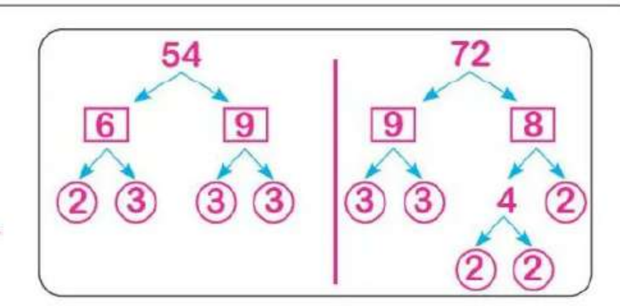


10 **6 X 9 , 8 X 9**

54 = 2 X 3 X 3 X 3

72 = 2 X 3 X 3 X 2 X 2

GCF = 2 X 3 X 3 = 18



2 Complete the following sentences:

1. If **y** = 2 X 2 X 2 X 2, then **y** = ...16... .
2. If **d** = 3 X 3 X 5, then **d** = ...45... .
3. The prime factors of **17** are ...17... .
4. The prime factors of **26** are ...2 X 13... .
5. The greatest common factor of **3** and **5** is ...1... .
6. The greatest common factor of **7** and **14** is ...7... .
7. The prime number whose factors sum is **12**, is ...11... .
8. The prime number between **90** and **100** is ...97... .

3 Choose the correct answer:

1. The prime factors of **14** are ...2 X 7... .
   (2 X 7 or 1 X 14 or 1 X 2 X 7 or 2 X 3 X 4)
2. The prime factors of **16** are 2 X 2 X 2 X 2
   (2 X 8 or 2 X 2 X 4 or 4 X 4 or 2 X 2 X 2 X 2)
3. The **greatest common factor** of any two prime numbers is ...one... .
   (the largest number or the smallest number or one or zero)
4. The **greatest common factor** of two numbers, one of which is a factor of the other, is ...the smaller number... (the largest number or the smaller number or the product of the two numbers or the sum of the two numbers)
5. The **greatest common factor** of 28 and 14 is ...14... . (7 or 2 or 28 or 14)
6. The **greatest common factor** of 11 and 5 is ...1... . (11 or 5 or 1 or 16)
7. If the common **prime** factors of two numbers are 2, 2, 3, then the **GCF** for these two numbers ...12... . (223 or 7 or 12 or 24)

Assessment 4 on Lesson 5

Unit 2

First: **Choose the correct answer:**

1. The prime factor(s) of **14** are/is ...2 , 7... .
   - a) 2
   - b) 2, 7
   - c) 1, 2, 7, 14
   - d) 3
2. The **greatest common factor** of any two prime numbers is ...1... .
   - a) the largest number
   - b) the smallest number
   - c) 1
   - d) there is no common factors
3. The greatest common factor of **21** and **7** is ...7...
   - a) 7
   - b) 21
   - c) 28
   - d) 14
4. The common **prime** factors of two numbers are: **2, 3, 5**, then the GCF of these two numbers is ...30...
   - a) 6
   - b) 30
   - c) 10
   - d) 2

Second: **Complete the following sentences:**

1. If **n** = 2 X 2 X 7 then, n = ...28... .
2. The factors of **23** are ...1 , 23... .
3. The prime factors of **19** are ...19... .
4. The **greatest common factor** of **8** and **5** is ...1... .
5. A prime number whose factors sum is **6** is ...5... .

Third: **Find the greatest common factor for each of the following:**

1. **30 , 20**

   30 = 2 X 3 X 5

   20 = 2 X 5 X 2

   GCF = 2 X 5 = 10

2. **12 , 48**

   12 = 2 X 2 X 3

   48 = 2 X 2 X 3 X 2 X 2

   GCF = 2 X 2 X 3 = 12

Fourth:

Find the **greatest common factor** of (6 X 6) and (5 X 8).

GCF = 4 .

Lessons 6&7 Identifying Multiples Least Common Multiple (LCM)

1 Circle the multiples of the following numbers:

1. 3 → 2 , (6) , (12) , 14 , (21) , 25 , (30) , 37 , (42)
2. 6 → (0) , 2 , (18) , 21 , (30) , (42) , 52 , 56 , (60)
3. 10 → 5 , 15 , (10) , 25 , 35 , (40) , (50) , 95 , (100)
4. 5 → 8 , 12 , (25) , (45) , 59 , (85) , (150) , 551 , (15)
5. 7 → 2 , (14) , 27 , (35) , 47 , (49) , (63) , (77) , 81

2 Answer the following:

1. a. List the first 10 multiples of 3: 0, 3, 6, 9, 12, 15, 18, 21, 24, 27
   b. List the first 5 multiples of 6: 0, 6, 12, 18, 24
   c. The common multiples of 3 and 6 of those you listed: 0, 6, 12, 18, 24
   d. The least common multiple of the two numbers is 6
2. a. List the first 7 multiples of 6: 0, 6, 12, 18, 24, 30, 36
   b. List the first 7 multiples of 4: 0, 4, 8, 12, 16, 20, 24
   c. The common multiples of 6 and 4 of those you listed: 0, 12, 24
   d. The least common multiple of the two numbers is 12
3. a. List the first 5 multiples of 8: 0, 8, 16, 24, 32
   b. List the first 10 multiples of 4: 0, 4, 8, 12, 16, 20, 24, 28, 32, 36
   c. The common multiples of 8 and 4 of those you listed: 0, 8, 16, 24, 32
   d. The least common multiple of the two numbers is 8
4. a. List the first 5 multiples of 6: 0, 6, 12, 18, 24
   b. List the first 8 multiples of 8: 0, 8, 16, 24, 32, 40, 48, 56
   c. The common multiples of 6 and 8 of those you listed: 0, 24
   d. The least common multiples of the numbers is 24



Theme 1

3 Find the GCF and LCM for each of the following:

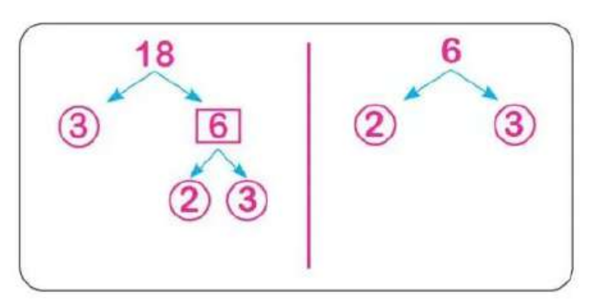
1 8, 6

8 = 2 X 2 X 2

6 = 2 X 3

GCF = 2 = 2

LCM = 2 X 2 X 2 X 3 = 24



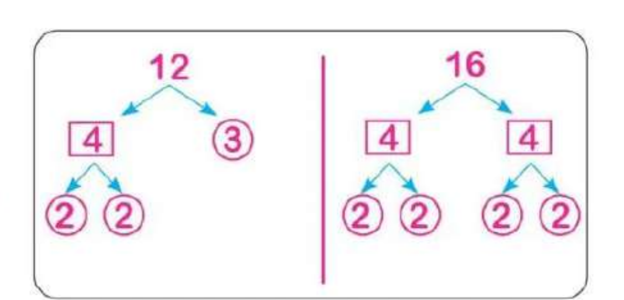
2 12, 16

12 = 2 X 2 X 3

16 = 2 X 2 X 2 X 2

GCF = 2 X 2 = 4

LCM = 2 X 2 X 3 X 2 X2 = 48



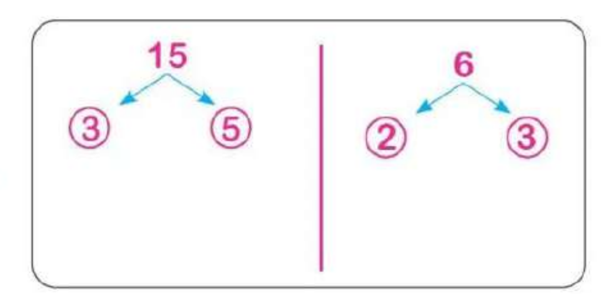
3 15,6

15 = 3 X 5

6 = 3 X 2

GCF = 3 = 3

LCM = 3 X 5 X 2 = 30



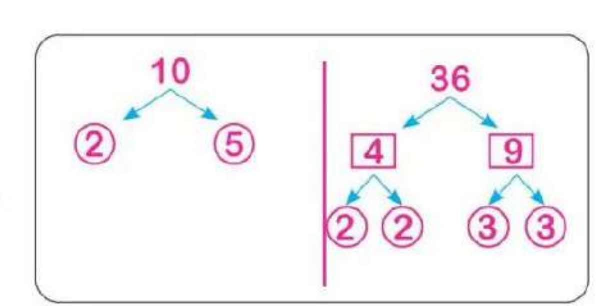
4 10, 8

10 = 2 X 5

8 = 2 X 2 X 2

GCF = 2 = 2

LCM = 2 X 5 X 2 X 2 = 40



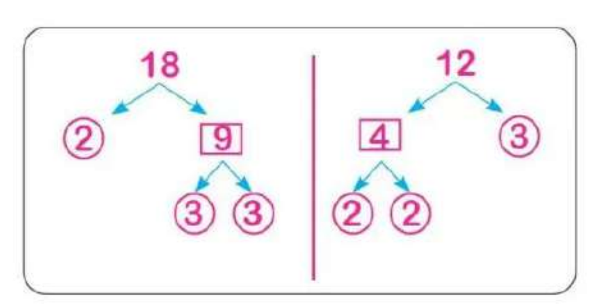
5 **18, 12**

18 = 3 X 3 X 2

12 = 3 X 2 X 2

GCF = 3 X 2 = 6

LCM = 3 X 3 X 2 X 2 = 36



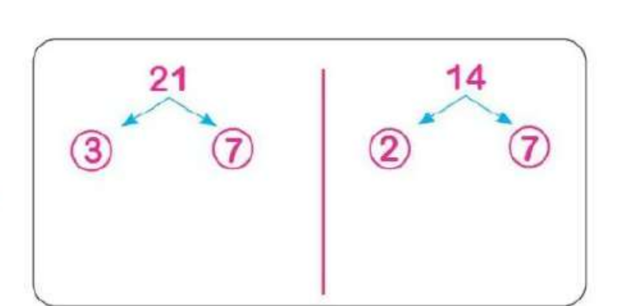
6 **21, 14**

21 = 3 X 7

14 = 7 X 2

GCF = 7 = 7

LCM = 3 X 7 x 2 = 42



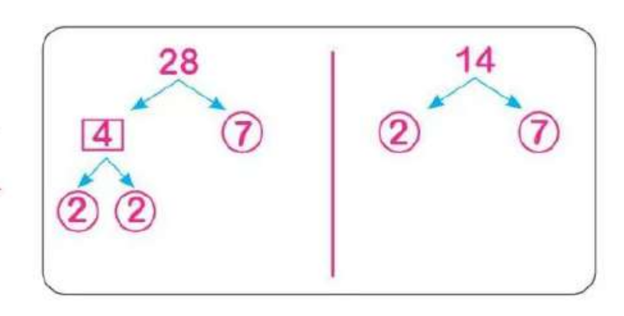
7 **28,14**

28 = 2 X 2 X 7

14 = 2 X 7

GCF = 2 X 7 = 14

LCM = 2 X 2 X 7 = 28



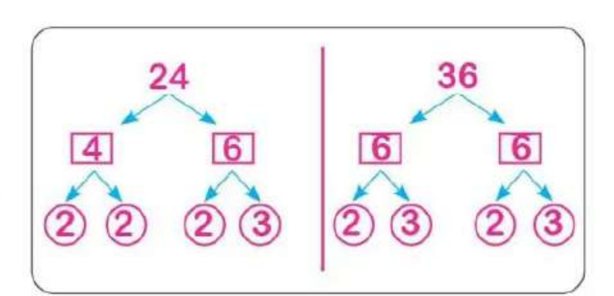
8 **24, 36**

24 = 2 X 2 X 2 X 3

36 = 2 X 2 X 3 X 3

GCF = 2 X 2 X 3 = 12

LCM = 2 X 2 X 2 X 3 X 3 = 72



Theme 1

4 Choose the correct answer:

1. ......27...... is a multiple of **9** (19 or 6 or 3 or [27])
2. **14** is a multiple of ......7...... (4 or [7] or 21 or 28)
3. The common multiple of all numbers is ......0...... (1 or 2 or 3 or [0])
4. The LCM of **9** and **6** is ......18...... (54 or 36 or [18] or 9)
5. The LCM of **8** and **10** is ......40...... (10 or 80 or 8 or [40])
6. .... is a number that has more than one set of factor pairs (Prime number or Factor or Multiple or [Composite number])
7. ...factor... is the number that is **multiplied** by another number to get the product. (Prime number or [Factor] or Multiple or Composite number)
8. Counting by jumping is a way to find the .... of a number. (sum or factors or [multiples] or other)
9. The least common multiple of any **two** prime numbers is .... (the largest number or the smaller number or [the product of the two numbers] or the sum of the two numbers)
10. The least common multiple of **two** numbers, one of which is a factor of the other is .... ([the largest number] or the smaller number or the product of the two numbers or the sum of the two numbers)

Assessment 5 on Lessons 6&7

Unit 2

First: Choose the correct answer:

1. ....16.... is a multiple of **8**.
   ⓐ 2 ⓑ 4 ⓒ 16 ⓓ 6
2. **24** is a multiple of ....8....
   ⓐ 16 ⓑ 14 ⓒ 8 ⓓ 9
3. The **common multiple** of all numbers is ....0.... .
   ⓐ 0 ⓑ 1 ⓒ 2 ⓓ 3
4. The LCM of **8** and **4** is ....8.... .
   ⓐ 4 ⓑ 8 ⓒ 16 ⓓ 12
5. The LCM of **3** and 5 is ....15.... .
   ⓐ 8 ⓑ 15 ⓒ 30 ⓓ 45

Second: Use the following words to complete:
(prime, factor, One, composite number, multiples)

1. A composite number is a number with more than one set of factor pairs.
2. A ..factor.. is a number that is multiplied by another number to get a product.
3. Skip counting is a way to find the **multiples** of a number.
4. ....One.... is a factor of all numbers.
5. The ..prime.. number has only 2 factors: one and the number itself.

Third: Find the GCF and LCM for each of the following:

1. **8, 16**

   8 = 2 X 2 X 2

   16 = 2 X 2 X 2 X 2

   GCF = 2 X 2 X 2 = 8

   LCM = 2 X 2 X 2 X 2 = 16

2. **15, 20**

   15 = 3 X 5

   20 = 5 X 2 X 2

   GCF = 5 = 5

   LCM = 3 X 5 X 2 X 2 = 60

Fourth: Find the LCM for the numbers 8 and 12.

1. The multiples of **8** are: 0 , 8 , 16 , 24 , 32 , 40 , 48 .
2. The multiples of **12** are: 0 , 12 , 24 , 36 . 48
3. The **common multiples** are: 0 , 24 , 48 .
4. **LCM** = 24 .

Theme 1

Lesson 8 Factors or Multiples?

1 Find the GCF and LCM for each of the following:

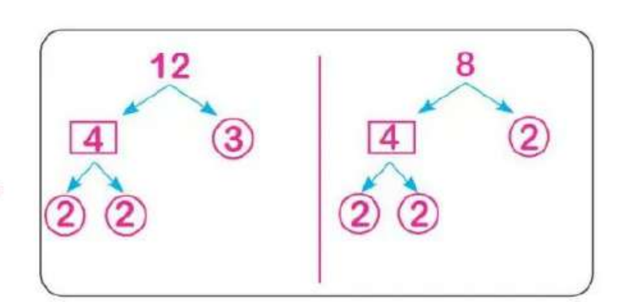
1 12, 8

12 = 2 X 2 X 3

8 = 2 X 2 X 2

GCF = 2 X 2 = 4

LCM = 2 X 2 X 3 X 2 = 24



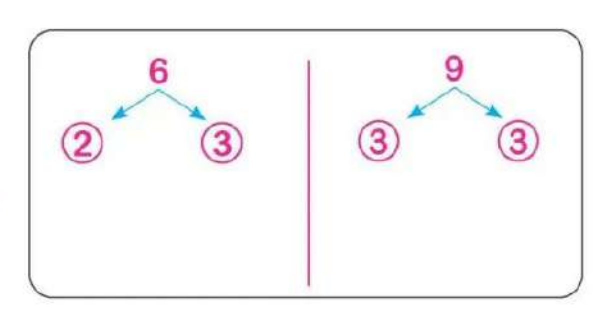
2 6, 9

6 = 2 X 3

9 = 3 X 3

GCF = 3 = 3

LCM = 2 X 3 X 3 = 18



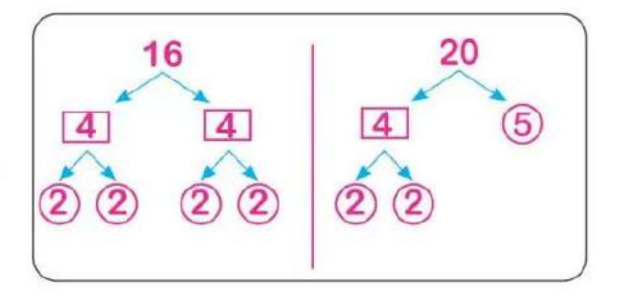
3 16, 20

16 = 2 X 2 X 2 X 2

20 = 2 X 2 X 5

GCF = 2 X 2 = 4

LCM = 2 X 2 X 2 X 2 X 5 = 80



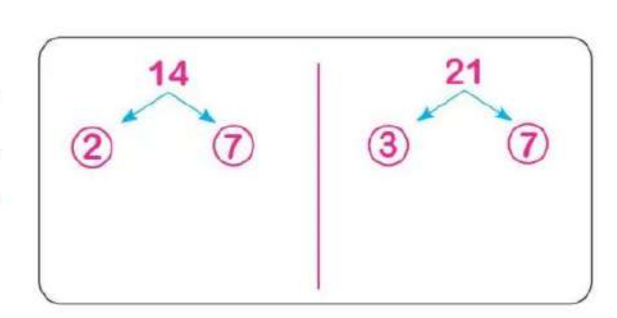
4 14, 21

14 = 2 X 7

21 = 7 X 3

GCF = 7 = 7

LCM = 2 X 7 X 3 = 42



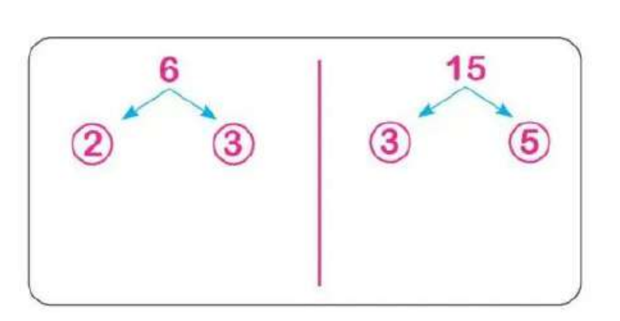
5 6, 15

6 = 3 X 2

15 = 3 X 5

GCF = 3 = 3

LCM = 3 X 2 X 5 = 30



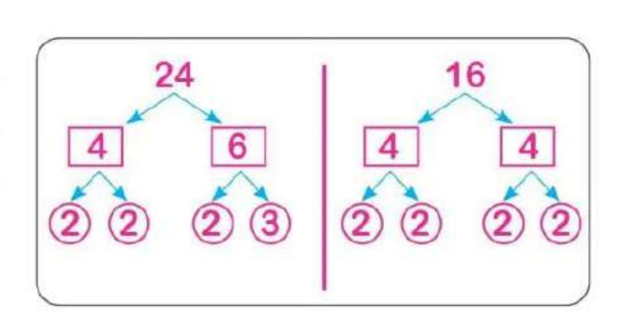
6 24, 16

24 = 2 X 2 X 2 X 3

16 = 2 X 2 X 2 X 2

GCF = 2 X 2 X 2 = 8

LCM = 2 X 2 X 2 X 3 X 2 = 48



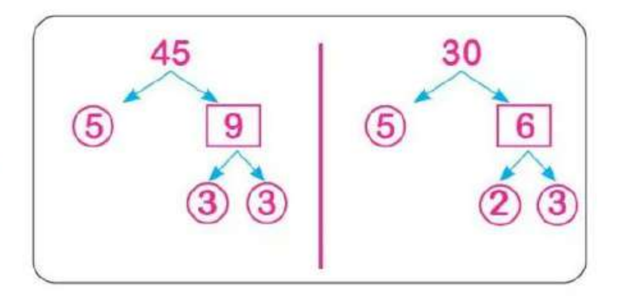
7 45, 30

45 = 3 X 3 X 5

30 = 3 X 5 X 2

GCF = 3 X 5 = 15

LCM = 3 X 3 X 5 X 2 = 90



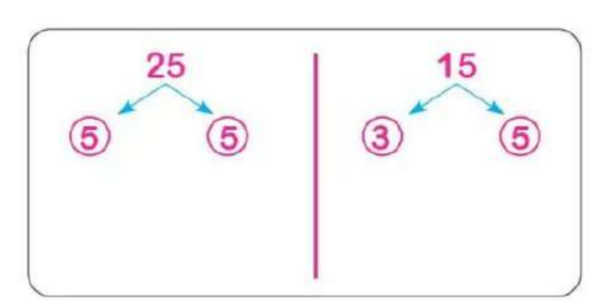
8 25, 15

25 = 5 X 5

15 = 5 X 3

GCF = 5 = 5

LCM = 5 X 5 X 3 = 75



2 Answer the following:

1 Mohamed trains to lift weights every **4** days and trains for tennis every **6** days. After how many days will Mohamed play tennis and lift weights on the same day?

After 12 days Mohamed will play tennis and lift weight on the same day

4 = 2 X 2
6 = 2 X 3

LCM = 2 X 2 X 3 = 12

2 Omnia has two strips of fabrics. One is **45** centimeters wide, and the other is **75** cm wide. She wants to cut both pieces into strips of equal width that are as wide as possible. How wide should she cut the strips?

The wide of the strips = 15 cm

45 = 3 X 3 X 5
75 = 3 X 5 X 5

LCM = 3 X 5 = 15

3 Ola sells baskets of figs each holding **9**. She also sells bags of pomegranates, each holding **7**. If she sells the same number of each, what is the smallest quantity of each type of fruit that she will sell?

The smallest quantity = 63 fruits

9 = 3 X 3
7 = 7

LCM = 3 X 3 X 7 = 63

4 Two alarms, one of which rings regularly every two hours, and the other rings regularly every **3** hours. If the two alarms rang together at **12** o'clock, at what hour did they ring together for the first time after that?

The two alarms rang together at 6 o'clock

2 = 2
3 = 3

LCM = 2 X 3 = 6

5 A merchant has **18** kg of oranges and **27** kg of apples. If merchant wants to divide the oranges and apples into bags of the same mass. What is the largest number of bags for each type of fruit to have bags with the same masses? How many kilograms of oranges will each bag contain? How many kilograms of apples will each bag contain?

The longest number of bags = 9 bags
the mass of oranges in each bag = 18 ÷ 9 = 2 Kg
the mass of apples in each bag = 27 ÷ 9 = 3 Kg

18 = 2 X 3 X 3
27 = 3 X 3 X 3
GCF = 3 X 3 = 9

6 A hospital has **12** doctors, and **28** nurses. Find the largest number of equal groups that can be formed of both doctors and nurses. How many doctors are in each group? What is the number of nurses in each group?

The longest number of groups = 4 groups
the mass of doctors in each group = 12 ÷ 4 = 3 doctors
the mass of nurses in each group = 28 ÷ 4 = 7 nurses

12 = 2 X 2 X 3
28 = 2 X 2 X 7
GCF = 2 X 2 = 4

7 Mahmoud wanted to divide **24** pens and **36** notebooks into groups, so that each group contained the same number of tools. What is the largest number of groups that can be formed for each type of tool, so that each group has the same number?

Number of groups = 12 groups
Number of pens in each group = 24 ÷ 12 = 2 pens
Number of notebooks in each group
= 36 ÷ 12 = 3 notebooks

24 = 2 X 2 X 2 X 3
28 = 2 X 2 X 2 X 3
GCF = 2 X 2 X 3 = 12

8 Adel goes to the club every **3** days to train for football, and his friend Ahmed goes to the same club every **4** days to train for volleyball.
After how many days will the two friends meet?

The number of days = 12 days

3 = 3
4 = 2 X 2
LCM = 3 X 2 X 2 = 12

Assessment 6 on Lesson 8

Unit 2

First: **Choose the correct answer:**

1 The GCF of **12** and **18** is ....6.... .

ⓐ 2 ⓑ 3 ⓒ 6 ⓓ 9

2 The LCM of **6** and **8** is ....24.... .

ⓐ 2 ⓑ 24 ⓒ 48 ⓓ 14

3 Which of the following is a multiple of **12**?

ⓐ 6 ⓑ 3 ⓒ 12 ⓓ 4

4 Which of the following is a common multiple of **9** and **6**?

ⓐ 3 ⓑ 12 ⓒ 27 ⓓ 18

Second: **Complete the following sentences:**

1 The multiples of **6** between **20** and **30** are ....24.... .

2 The prime factors of **27** are 3 X 3 X 3 .

3 The greatest common factor of **18** and **12** is ....6.... .

4 The LCM of **12** and **8** is ....24.... .

Third: **Answer the following:**

1 Menna gives her friends pencils and erasers. The store sells pencils in boxes of 8 and erasers in boxes of 10. If Menna wants the same number of each, what is the minimum number of pencils that she will have to buy?

LCM = 40 pencils

2 Nour makes snack bags for an upcoming trip. He has 6 oranges and 12 pieces of dried fruit. He wants the snack bags to be identical without any food left over. What is the greatest number of snack bags that Nour can make?

GCF = 6 bags

Assessment on Concept 2



Unit 2

First: **Choose the correct answer:**

1. The ......prime...... number has only **two** factors.
   - (a) prime (boxed)
   - (b) composite
   - (c) even
   - (d) odd
2. ....20.......... is a common multiple of **10** and **5**.
   - (a) 20 (boxed)
   - (b) 15
   - (c) 5
   - (d) 24
3. All the following numbers are multiples of **8**, except ....36.......... .
   - (a) 16
   - (b) 24
   - (c) 32
   - (d) 36 (boxed)
4. The greatest common factor of **12** and **6** is ....6.......... .
   - (a) 2
   - (b) 3
   - (c) 6 (boxed)
   - (d) 12

Second: **Complete the following sentences:**

1. ....1.......... is a common factor of all numbers.
2. **40, 25, 15** are multiples of the number ....5.......... .
3. ....0.......... is a common multiple of all numbers.
4. The LCM of **15** and **30** is ....30.......... .
5. If **40 = 5 x 8**, then ..40.. is a multiple of the two numbers ..5.. and ..8.. .

Third: **Put (✓) or (✗):**

1. **2** is an odd prime number. (✗)
2. The GCF for **2** and **3** is **3**. (✗)
3. The prime factors of **18** are 1, 2, 3, 6, 9, 18. (✗)
4. **14** is the LCM of **2** and **14**. (✓)
5. 0 and 7 are the multiples of **7**. (✓)

Fourth: **Answer the following:**

Sameh wanted to divide **21** pens and **35** notebooks into groups, so that each group contained the same number of tools. What is the largest number of groups that can be formed for each type of tool?

How many pens are in each group? How many notebooks are in each group?

..........GCF = 7 groups, 3 pens, 5 notebooks..........

....

Concept 3.1 Models for Multiplication

Lesson 1 Using the Area Model to Multiply

1 Multiply using the area model:

1 5 X 24 = 120

	20	4
5	100	20

100 + 20

2 9 X 385 = 3,465

	300	80	5
9	2,700	720	45

2,700 + 720 + 45

3 842 X 6 = 5,052

	800	40	2
6	4,800	240	12

4,800 + 240 + 12

4 4 X 217 = 868

	200	10	7
4	800	40	28

800 + 40 + 28

5 23 X 18 = 414

	10	8
20	200	160
3	30	24

200 + 160 + 30 + 24

6 43 X 54 = 2,322

	50	4
40	2,000	160
3	150	12

2,000 + 160 + 150 + 12

7 42 X 102 = 4,284

	100	2
40	4,000	80
2	200	4

4,000 + 80 + 200 + 4

8 89 X 450 = 40,050

	400	50
80	32,000	4,000
9	3,600	450

32,000 + 4,000 + 3,600 + 450

9 63 X 257 = 16,191

	200	50	7
60	12,000	3,000	420
3	600	150	21

12,000 + 3,000 + 420 + 600 + 150 + 21

10 28 X 134 = 3,752

	100	30	4
20	2,000	600	80
8	800	240	32

2,000 + 600 + 80 + 800 + 240 + 32

11 325 X 12 = 3,900

	300	20	5
10	3,000	200	50
2	600	40	10

3,000 + 200 + 50 + 600 + 40 + 10

12 275 X 45 = 12,375

	200	70	5
40	8,000	2,800	200
5	1,000	350	25

8,000 + 2,800 + 200 + 1,000 + 350 + 25

2 Write the multiplication problem that expresses the following models, and then solve it:

1

	80	6
5	400	30

400 + 30 = 430

5 X 86 = 430

2

	40	3
7	280	21

280 + 21 = 301

7 X 43 = 301

3

	200	7
8	1,600	56

1,600 + 56 = 1,656

8 X 207 = 1,656

4

	400	50	7
9	3,600	450	63

3,600 + 450 + 63 = 4,113

9 X 457 = 4,113

5

	20	5
80	1,600	400
3	60	15

1,600 + 400 + 60 + 15 = 2,075

83 X 25 = 2,075

6

	50	4
20	1,000	80
9	450	36

1,000 + 80 + 450 + 36 = 1,566

29 X 54 = 1,566

7

	500	20
40	20,000	800
7	3,500	140

20,000 + 800 + 3,500 + 140 = 24,440

47 X 520 = 24,440

8

	300	2
10	3,000	30
7	2,100	14

3,000 + 20 + 2,100 + 14 = 5,134

17 X 302 = 5,134

9

	300	50	9
20	6,000	1,000	180
5	1,500	250	45

6,000 + 1,000 + 180 + 1,500 + 250 + 45 = 5,134

25 X 359 = 8,975

10

	600	80	9
20	12,000	1,600	180
9	5,400	720	81

12,000 + 1,600 + 180 + 4,500 + 720 + 81 = 19,981

29 X 689 = 19,981

11

	900	20	7
40	36,000	800	280
7	6,300	140	49

36,000 + 800 + 280 + 6,300 + 140 + 49 = 43,569

47 X 927 = 43,569

Theme 1

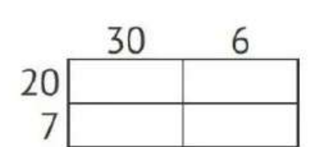
3 Choose the correct answer:

1 The multiplication problem that expresses the corresponding area model is 5 X 183 .



(5 X 915 or 5 X 183 or 143 or 5 X 12)

2 The multiplication problem that expresses the corresponding model is 4 X 807 .



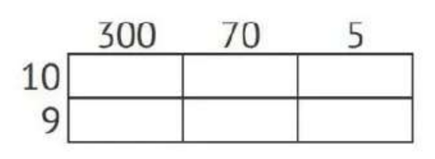
(4 X 870 or 4 X 807 or 4 X 780 or 4 X 708)

3 The multiplication problem that expresses the corresponding area model is 36 X 27 .

30 6
20
7

(36 X 27 or 63 X 72 or 207 X 306 or 26 X 37)

4 The multiplication problem that expresses the corresponding area model is 19 X 375 .

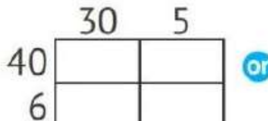


(19 X 15 or 19 X 312 or 19 X 375 or 573 X 91)

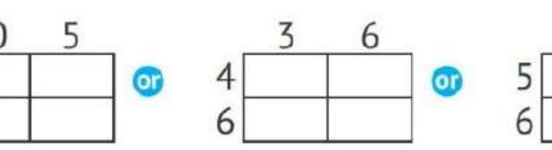
5 The area model that represents 45 x 36 is First model

30 6
40
5

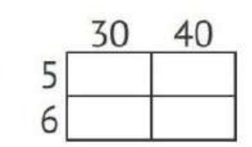
or



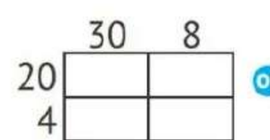
or



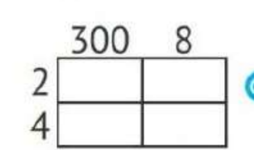
or



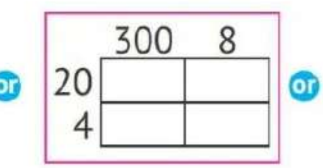
6 The area model that represents 24 X 308 is Third model



or



or



or

30 8
2
4

7 The area model that represents 67 X 174 is **Third model**

	1	7	4
60			
7			

or

	10	70	40
60			
7			

or

	100	70	4
60			
7			

or

	100	70	4
60			
7			

8 The multiplication problem that expresses the corresponding area model is **23 X 32** .

600	90
40	6

(690 X 46 or 640 X 96 or 23 X 32 or 203 X 32)

4 Answer the following:

1 Hazem bought **7** books, the price of each book is **10** pounds.
Find what Hazem paid.

Hazem paid = 7 X 10 = 70 pounds

2 Mona saves **100** pounds every month.
How much does Mona save in **5** months?

Mona saved = 5 X 100 = 500 pounds

3 Amr bought **4** suits, the price of one suit is **10,000** pounds.
Find what Amr paid.

Amr paid= 4 X 10,000 = 40,000 pounds

4 A box contains **200** balls. How many balls are in **eight** similar boxes?

Number of balls = 8 X 200 = 1,600 balls

Assessment 1 on Lesson 1

Unit 3

First: Choose the correct answer:

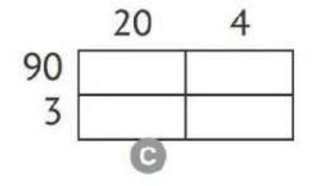
1 The area model that represents 93 X 204 is ....

	200	4
90		
3		

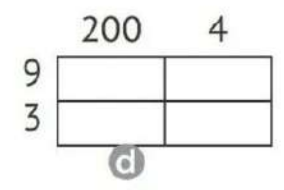
ⓐ

	20	4
9		
3		

ⓑ



ⓒ



ⓓ

2 The multiplication problem that expresses the following model is ....

ⓐ 75 X 48 ⓑ 705 X 408
ⓒ 75 X 408 ⓓ 705 X 48

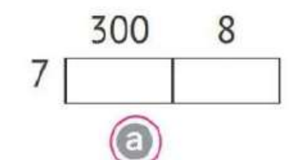
	400	8
70		
5		

3 The multiplication problem that expresses the following model is ....

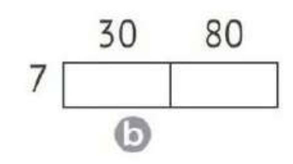
ⓐ 24 X 48 ⓑ 24 X 720
ⓒ 24 X 32 ⓓ 640 X 128

20	4
600	120
40	8

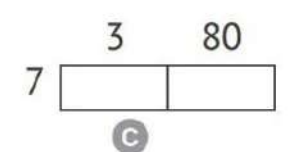
4 The model that expresses the following multiplication problem 7 X 308 is ....



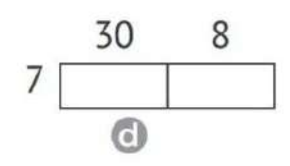
ⓐ



ⓑ



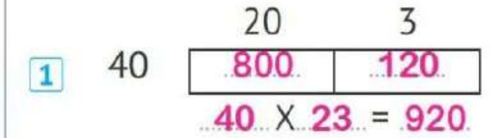
ⓒ



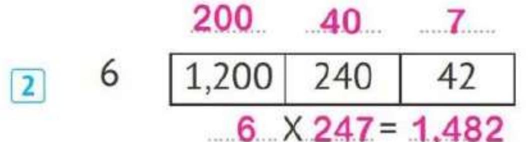
ⓓ

Second: Complete the following:

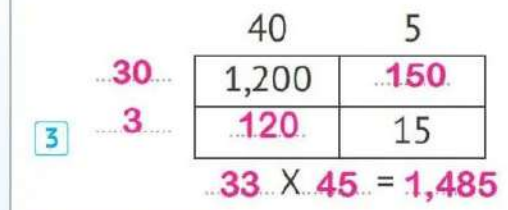
1



2



3



4

	40	5
70	2,800	350
5	200	25

75 X 45 = 3,375

Third: Answer the following:

Aya ran a 5-kilometer race on Saturday. If there are 1,000 meters in 1 kilometer, how many meters did she run?

5 X 1,000 = 5,000 m .

Lesson 2 The Distributive Property of Multiplication

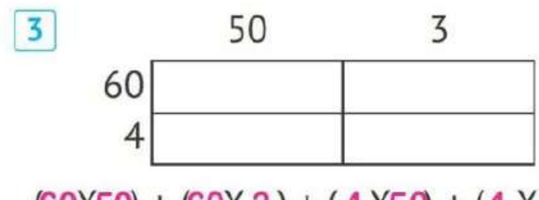
1 Find the product using the Distributive Property:

1. 8 X 27 = (8 X 7) + (8 X 20) = 56 + 160 = 216
2. 6 X 27 = (6 X 7) + (6 X 20) = 42 + 120 = 162
3. 7 X 306 = (7 X 6) + (7 X 300) = 42 + 2,100 = 2,142
4. 9 X 283 = (9 X 3) + (9 X 80) + (9 X 200) = 27 + 720 + 1,800 = 2,547
5. 15 X 79 = (10 + 5) X (70 + 9)
   = (10 X 70) + (10 X 9) + (5 X 70) + (5 X 9)
   = 700 + 90 + 350 + 45 = 1,185
6. 23 X 68 = (20 + 3) X (60 + 8) = (20 X 60) + (20 X 8) + (3 X 60) + (3 X 8)
   = = 1,200 + 160 + 180 + 24
   = = 1,564
7. 24 X 624 = (20 + 4) X (600 + 20 + 4)
   = (20 X 600) + (20 X 20) + (20 X 4) +
   (4 X 600) + (4 X 20) + (4 X 4) = 14,976

2 Solve using the area model:

1. 40, 5; 8
   (8 X 40) + (8 X 5)
   = 320 + 40
   = 360

2. 200, 8; 7
   (7 X 200) + (7 X 8)
   = 1,400 + 56
   = 1,456

3. 50, 3; 60, 4
   
   (60 X 50) + (60 X 3) + (4 X 50) + (4 X 3)
   = 3,000 + 180 + 200 + 12
   = 3,392

4. 40, 7; 10, 3
   (10 X 40) + (10 X 7) + (3 X 40) + (3 X 7)
   = 400 + 70 + 120 + 21
   = 611

5

	400	70	4
20			
4			

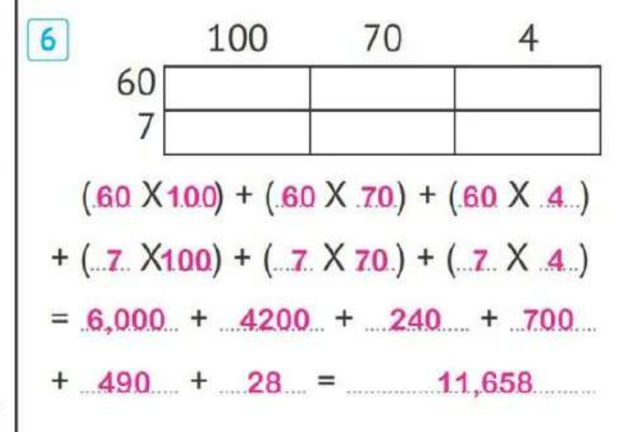
(20 X 400) + (20 X 70) + (20 X 4)

+ (4 X 400) + (4 X 70) + (4 X 4)

= 8,000 + 1,400 + 80 + 1,600

+ 280 + 16 = 11,376

6



	100	70	4
60			
7			

(60 X 100) + (60 X 70) + (60 X 4)

+ (7 X 100) + (7 X 70) + (7 X 4)

= 6,000 + 4200 + 240 + 700

+ 490 + 28 = 11,658

3 Solve using the area model:

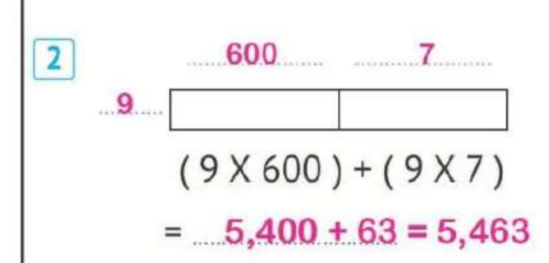
1

	20	7
8		

(8 X 20) + (8 X 7)

= 160 + 56 = 216

2



	600	7
9		

(9 X 600) + (9 X 7)

= 5,400 + 63 = 5,463

3

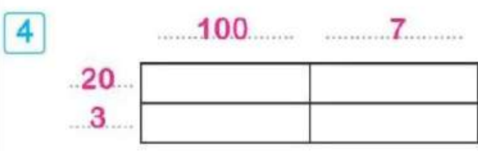


	70	3
40		
6		

(40 X 70) + (40 X 3) + (6 X 70) + (6 X 3)

= 2,800 + 120 + 420 + 18 = 3,358

4



	100	7
20		
3		

(20 X 100) + (20 X 7) + (3 X 100) + (3 X 7)

= 2,000 + 140 + 300 + 21 = 2,461

5

	500	80	4
20			
4			

(20 X 500) + (20 X 80) + (20 X 4)

+ (4 X 500) + (4 X 80) + (4 X 4)

= 10,000 + 1,600 + 80 + 2,000

+ 320 + 16 = 14,016

6

	200	80	3
60			
4			

(60 X 200) + (60 X 80) + (60 X 3)

+ (4 X 200) + (4 X 80) + (4 X 3)

= 12,000 + 4,800 + 180 + 800

+ 320 + 12 = 18,112



4 **Using the rectangle model, find the result of 74 x 12. Divide the numbers in three different ways:**

1) 45 X 27 = 1,215 ⓐ  ⓑ  ⓒ 

2) 73 X 15 = 1,095 ⓐ  ⓑ  ⓒ 

3) 21 X 479 = 10,059 ⓐ  ⓑ  ⓒ 

4) 38 X 208 = 7,904 ⓐ  ⓑ  ⓒ 

5 **Complete the following:**

1) 178 X 8 = 8 X (...100... + ...70... + ...8...)

2) 6 X (200 + 30 + 7) = ...6... X ...237...

3) 45 X 36 = (...40... + ...5...) X (...30... + ...6...)

4) 72 X 15

= (70 X ...10...) + (70 X ...5...) + (2 X ...10...) + (2 X ...5...)

5) (30 X 500) + (30 X 20) + (7 X 500) + (7 X 20) = ...37... X ...520...

6)

	20	5
30	600	150
7	140	35

7)

	200	3
40	8,000	120
4	800	12

6 Choose the correct answer:

1. 5 X (600 + 2) = **5 X 602** (5 X 8 or 5 X 62 or 5 X 602 or 5 X 6,002)

2. 8 X 420 = 8 X (**400 + 20**) (4 + 20 or + 20 or 400 + 2 or 400 + 20)

3. 12 X 200 + 12 X 30 + 12 X 5 = 12 X **235** . (12 or 205 or 230 or 235)

4. 56 X 93 = **(50 + 6) X (90 + 3)**

   ((50+6) X (90+3) or (50X6) + (90X3) or (50+6) + (90+3) or (5+6) X (9+3))

5. (80X50) + (80X7) + (3X50) + (3X 7) = **83 X 57**

   (85 X 37 or 83 X 57 or 87 X 35 or 78 X 35)

6. The multiplication problem that expresses the corresponding area model is **56 X 56**.

2,500	300
300	36

   (56 X 56 or 25 X 36 or 65 X 65 or 300 X 36)

7. The multiplication problem that expresses the corresponding area model is **48 X 207**

	200	7
40		
8		

   (48 X 270 or 48 X 27 or 48 X 207 or 48 X 9)

8. The area model that represents (8X 200) + (8 X 6) is **First model**

	200	6
8		

or

	20	6
8		

or

	200	60
8		

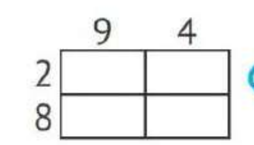
or

	20	60
8		

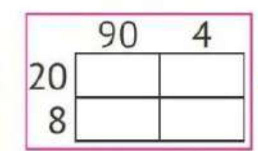
9. The area model that represents (20 + 8) X (90 + 4) is **Third model**

	90	8
20		
4		

or



or

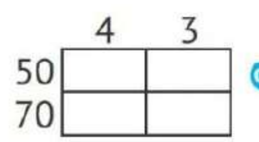


or

	900	4
200		
8		

10. The area model that represents

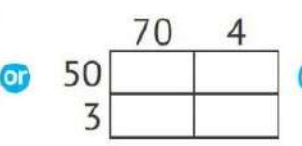
   (50 X 70) + (50 X 3) + (4 X 70) + (4 X 3) is **Second model**



or

	70	3
50		
4		

or



or

	7	3
5		
4		

Assessment 2 on Lesson 2

Unit 3

First: **Choose the correct answer:**

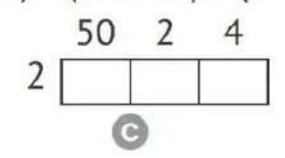
1. 7 X (500 + 4) = 7 X 504
   - a) 7 X 54
   - b) 7 X 504
   - c) 7 X 5,004
   - d) 7 X 9

2. (60 X 20) + (60 X 3) + (7 X 20) + (7 X 3) = 67 X 23
   - a) 67 X 23
   - b) 62 X 73
   - c) 63 X 27
   - d) 76 X 32

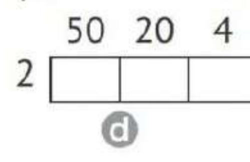
3. The area model that represents (2 X 500) + (2 X 20) + (2 X 4) is ....

   a) 2 × [500 | 20 | 4]

   b) 2 × [5 | 2 | 4]

   c) 2 × [50 | 2 | 4]

   d) 2 × [50 | 20 | 4]

4. The problem that represents the opposite area model is 4 X (600 + 9)

   4 × [600 | 9]

   - a) 4 X (6 + 9)
   - b) 4 X (60 + 9)
   - c) 4 X (600 + 9)
   - d) 4 X (60 + 90)

5. 15 X 56 = 15 X (50 + 6)
   - a) 50 + 6
   - b) 5 + 6
   - c) 50 + 60
   - d) 5 + 60

Second: **Complete the following:**

1. 7,480 X 7 = 7 X (7,000 + 400 + 80) = 52,360
2. 23 X 46 = (20 X 40) + (20 X 6) + (3 X 40) + (3 X 6)
3. 24 X 506 = (20 X 500) + (20 X 6) + (4 X 500) + (4 X 6)
4. 3 X 6,230 = 3 X (6,000 + 200 + 30)
5. 2 X 505 = (2 X 500) + (2 X 5)

Third: **Multiply using the Distributive Property:**

1. 2 X 89 = 2 X (80 X 9) = (2 X 80) + (2 X 9)
   = 160 + 18 = 178

2. 45 X 89 = (40 + 5) X (80 + 9) = (40 X 80) + (40 X 9) + (5 X 80) + (5 X 9)
   = 3,200 + 360 + 400 + 45
   = 4,005

3. 627 X 43 = (600 + 20 + 7) X (40 + 3)
   (600 X 40) + (600 X 3) + (20 X 40) + (20 X 3) + (7 X 40) + (7 X 3)
   = 24,000 + 1,800 + 800 + 60 + 280 + 21 = 26,961



Assessment on Concept 1



Unit 3

First: Choose the correct answer:

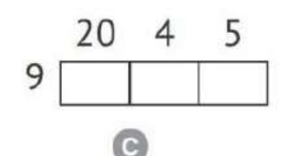
1 5 X 1,000 = ...5,000...

ⓐ 50 ⓑ 500 ⓒ 5,000 ⓓ 50,000

2 25 X 80 = ...2 X 1,000...

ⓐ 2 X 10,000 ⓑ 2 X 1,000 ⓒ 2 X 100 ⓓ 2 x 10

3 The area model that represents (9X 200) + (9 X 40) + (9 X 5) is ....



ⓐ 200 40 5 (9) ⓑ 2 4 5 (9) ⓒ 20 4 5 (9) ⓓ 20 40 5 (9)

4 The multiplication problem that the opposite model represents is ....

ⓐ 46 X 29 ⓑ 49 X 62
ⓒ 42 X 69 ⓓ 26 X 94

	60	9
40		
2		

5 The multiplication problem that the opposite model represents is ...12 X 302... .

ⓐ 12 X 32 ⓑ 12 X 302
ⓒ 102 X 302 ⓓ 102 X 32

3,000	20
600	4

Second: Complete the following:

1 8 X 10,000 = 80,000

2 1,000 X ...7... = 7,000

3 ...12... X ...57... = (10 X 50) + (10 X 7) + (2 X 50) + (2 X 7)

4 9 X ...623... = 9 × (600 + 20 + 3)

5 7 X 903 = (7 X ...900...) + (7 X ...3...)

Third: Solve the following problems using the mentioned strategy:

1 2 X 47 (Distributive Property)

2 X (40 + 7) = (2 X 40)+ (2 X 7)

80 + 14 = 94

2 14 X 23 (Area Model)

200 + 30 + 80 + 12

322

	20	3
10	200	30
4	80	12

Fourth: Answer the following:

Omar owns 12 buses to transport tourists, each bus can carry 25 passengers. How many passengers can Omar carry each day if each bus is full?

12 X 25 = 300 passengers

Concept 3.2 Multiplying 4-Digit Numbers by 2-Digit Numbers

Lessons 3-5

Multiplying by a 2-Digit Numbers Using Algorithm
Multiplying Multi-Digit Numbers
Multiplication Problems in the Real World

1 Find the product using the standard algorithm for multiplication:

1 82 X 4 328	2 608 X 9 5,472	3 264 X 7 1,848
4 9324 X 8 74,592	5 39 X 25 195 + 780 975	6 75 X 36 450 + 2250 2,700
7 306 X 18 2,448 + 3,060 5,508	8 617 X 54 2,468 +30,850 33,318	9 4,107 X 36 24,642 +123,210 147,852
10 6,073 X 48 48,584 +242,920 291,504	11 8,347 X 76 50,082 +584,290 634,372	12 9,678 X 32 19,356 +290,340 309,696

Theme 1

2 Find the product using the area model:

1 9,532 X 12 = 114,384

	9,000	500	30	2
10	90,000	5,000	300	20
2	18,000	1,000	60	4

2 6,324 X 25 = 158,100

	6,000	300	20	4
20	120,000	6,000	400	80
5	30,000	1,500	100	20

3 3,214 X 37 = 118,918

	3,000	200	10	4
30	90,000	6,000	300	120
7	21,000	1,400	70	28

4 6,312 X 72 = 454,464

	6,000	300	10	2
70	420,000	21,000	700	140
2	12,000	600	20	4

5 9,231 X 28 =258,468

	9,000	200	30	1
20	180,000	4,000	600	20
8	72,000	1,600	240	8

6 6,324 X 37 = 233,988

	6,000	300	20	4
30	180,000	9,000	600	120
7	42,000	2,100	140	28

3 Find the product using the partial products model:

1 24 X 34 = ...

816

2 37 X 21 = ...

777

3 62 X 206 = ...

12,772

4 73 X 215 = ...

15,695

5 42 X 2,034 = ...

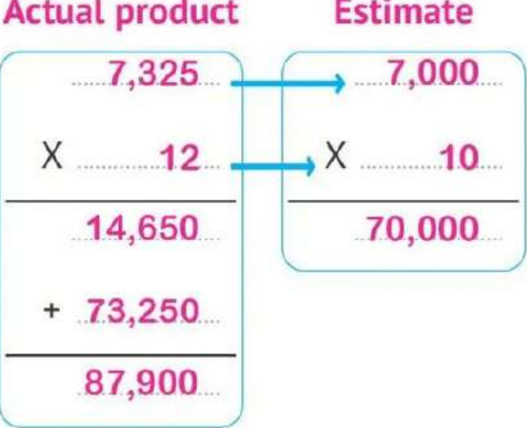
85,428

6 36 X 6,415 = ...

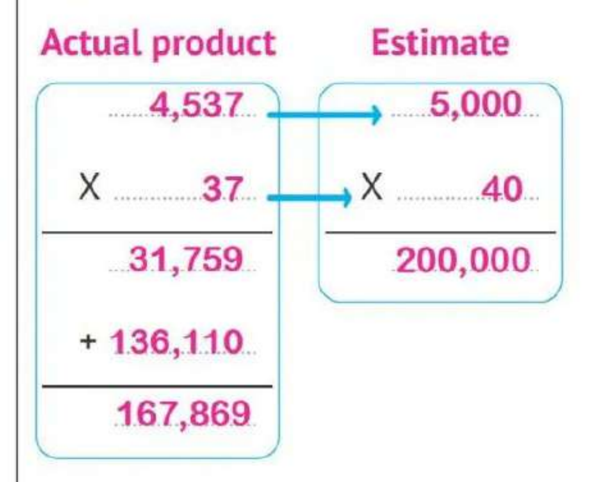
230,940

4 Estimate the product of the multiplication, and then find the actual product:

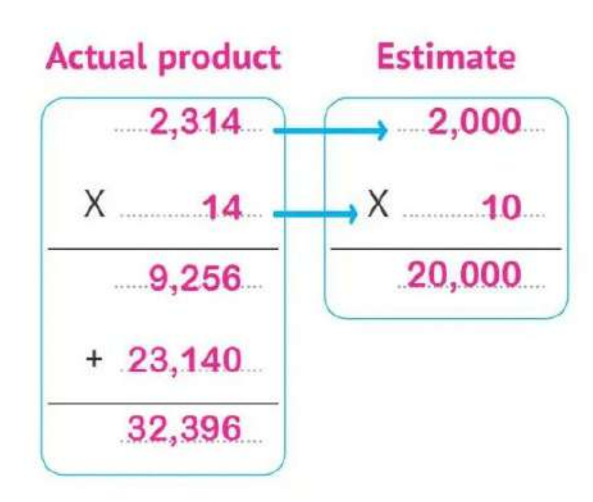
1 7,325 X 12



2 4,537 X 37



3 2,314 X 14



4 6,324 X 34

Actual product

6,324
X 34
25,296
+ 189,720
215,016

Estimate

6,000
X 30
180,000

5 Answer the following:

1 Each river bus can carry **22** passengers at a time.

What is the maximum number of passengers that the river bus can carry during **25** trips?

22 X 25 = 550 passengers

2 A rectangular piece of land has a length of **256** meters, and a width of **62** meters. Find its area.

Area = 256 X 62 = 15,872 square meters

3 Khaled bought **34** meters of cloth, the price of one meter was **9,560** piasters. What is the price of the cloth that Khaled bought?

9,560 X 34 = 325,040 piasters

4 A bus is **1,285** centimeters long. How long are **21** buses?

1,285 X 21 = 26,985 cm

5 Marwan bought a car, and agreed with the owner of the car showroom to pay for it in **12** equal installments, the value of each installment is **9,865** pounds. What is the price of the car?

9,865 X 12 = 118,380 pounds

6 Mona saves **1,023** pounds every month. What is the total amount that Mona saves in **18** months?

1,023 X 18 = 18,414 pounds

7 **16** people participated in an exhibition, and each won **8,234** pounds. How much did they all win?

8,234 X 16 = 131,744 pounds

8 A bag of fruit has a mass of **2,445** grams. What is the mass of **45** similar bags?

2,445 X 45 = 110,025 g

Assessment on Concept 2



Unit 3

First: Choose the correct answer:

1 The problem that represents the opposite area model is ....

	5,000	400	3
60			
7			

ⓐ 5,403 X 67 ⓑ 5,043 X 67
ⓒ 5,430 X 67 ⓓ 543 X 67

2 The problem that represents the opposite area model is ....

120,000	2,000	80
9,000	150	6

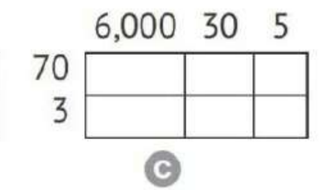
ⓐ 3,502 X 43 ⓑ 3,052 X 43
ⓒ 3,520 X 43 ⓓ 352 X 43

3 The model that represents 6,350 X 73 is ....

ⓐ

	6,000	300	50
70			
3			

ⓑ



ⓒ

	6,000	30	5
70			
3			

ⓓ

	600	30	5
70			
3			

4 3,006 X 25 = ...

ⓐ 21,042 ⓑ 90,000 ⓒ 7,650 ⓓ 75,150

5 2,300 X 30 = ...

ⓐ 69,000 ⓑ 6,900 ⓒ 60,900 ⓓ 96,000

Second: Solve the following problems using the mentioned strategy:

1 5,080 X 23

(Distributive Property)

(5,000 + 80) X (20 + 3)

= (5,000 X 20) + (5,000 X 3)

+ (80 X 20) + (80 X 3)

= 116,840

2 9,007 X 64

(Standard Algorithm)

```
      9,007
  X      64
  ---------
     36,029
 +  540,420
  ---------
    576,448
```

3 2,125 X 74

(Area Model)

	2,000	100	20	5
70	140,000	7,000	1,400	350
4	8,000	400	80	40

= 157,250

Third: Answer the following:

- Huda bought 18 kg of bananas, the price of a kilogram was 15 pounds, and she bought 18 kilograms of mangoes, the price of a kilogram was 25 pounds. What is the total amount that Huda paid?

18 X 15 + 18 X 25 = 270 + 450 = 720 pounds .

Theme 2

Mathematical Operations and Algebraic Thinking

DIVIDE: 29 ÷ 3

MULTIPLY: 9 X 3

SUBTRACT: 29 − 27

DROP THE DIGIT: 1

	29
3	891
	−6
	29
	−27
	21



Theme Units:

Unit 4 Division with Whole Numbers

Concept 4.1: Models for Division

Concept 4.2: Dividing by 2-Digit Divisors

Unit 5 Multiplication and Division with Decimals

Concept 5.1: Multiplying Decimals

Concept 5.2: Dividing Decimals 2

Unit 6 Numerical Expressions and Patterns

Concept 6.1: Evaluating Numerical Expressions and Patterns

Unit 4 Division with Whole Numbers

Concept 4.1 Models for Division

Lessons 1&2 Dividing by a Two-Digit Number / Estimating Quotients

1 Divide using the **area model**:

1 96 ÷ 4 = 24

	20	4
4	96 − 80 16	16 − 16 00

20 + 4 = 24

2 87 ÷ 5 = 17 (R2)

	10	7
5	87 − 50 37	37 − 35 2

10 + 7 = 17

3 85 ÷ 3 = 28 (R1)

	20	8
3	85 − 60 25	25 − 24 1

20 + 8 = 28

4 465 ÷ 5 = 93

	50	40	3
5	465 − 250 215	215 − 200 15	15 − 15 00

50 + 40 + 3 = 93

5 378 ÷ 6 = 63

	50	10	3
6	378 − 300 78	78 − 60 18	18 − 18 00

50 + 10 + 3 = 63

6 358 ÷ 4 = 89 (R2)

	50	30	9
4	358 − 200 158	158 − 120 38	38 − 36 2

50 + 30 + 9 = 89

7 946 ÷ 2 = 473

	400	50	20	3
2	946 − 800	146 − 100	46 − 40	6 − 6
	146	46	6	0

400 + 50 + 20 + 3 = 473

8 861 ÷ 7 = 123

	100	20	3
7	861 − 700	161 − 140	21 − 21
	161	21	00

100 + 20 + 3 = 123

9 898 ÷ 8 = 112 (R2)

	100	10	2
7	898 − 800	98 − 80	18 − 16
	98	18	2

100 + 10 + 2 = 112

10 1,378 ÷ 2 = 689

	500	100	80	9
2	1,378 − 1,000	378 − 200	178 − 160	18 − 18
	378	178	18	00

500 + 100 + 80 + 9 = 689

11 2,754 ÷ 3 = 918

	500	400	10	8
3	2,754 − 1,500	1,254 − 1,200	54 − 30	24 − 24
	1,254	54	24	0

500 + 400 + 10 + 8 = 918

12 3,846 ÷ 5 = 769 (R1)

	500	200	60	9
5	3,846 − 2,500	1,346 − 1,000	346 − 300	46 − 45
	1,346	346	46	1

500 + 200 + 60 + 9 = 769

13 8,444 ÷ 6 = 1,407 (R2)

	1,000	400	7
6	8,444 − 6,000	2,444 − 2,400	44 − 42
	2,444	44	2

1,000 + 400 + 7 = 1,407

2 Divide using the area model:

1 705 ÷ 15 = 47

	20	20	7
15	705	405	105
	– 300	– 300	– 105
	405	105	00

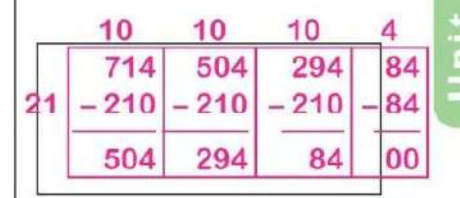
20 + 20 + 7 = 47

2 882 ÷ 13 = 67 (R11)

	50	10	7
13	882	232	102
	– 650	– 130	– 91
	232	102	11

50 + 10 + 7 = 67

3 714 ÷ 21 = 34



	10	10	10	4
21	714	504	294	84
	– 210	– 210	– 210	– 84
	504	294	84	00

10 + 10 + 10 + 4 = 34

4 1,530 ÷ 34 = 45

	20	20	5
34	1,530	850	170
	– 680	– 680	– 170
	850	170	00

20 + 20 + 5 = 45

5 1,512 ÷ 24 = 63

	50	10	3
24	1,512	312	72
	– 1,200	– 240	– 72
	312	72	00

50 + 10 + 3 = 63

6 1,120 ÷ 32 = 35

	20	10	5
32	1,120	480	160
	– 640	– 320	– 160
	480	160	00

20 + 10 + 5 = 35

7 7,584 ÷ 32 = 237

	100	100	30	7
32	7,584	4,384	1,184	224
	– 3,200	– 3,200	– 960	– 224
	4,384	1,184	224	00

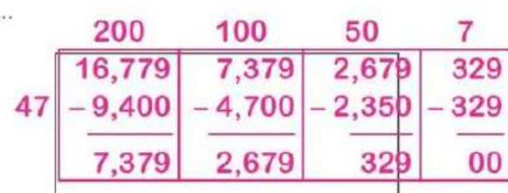
100 + 100 + 30 + 7 = 237

8 7,175 ÷ 35 = 205

	100	100	5
35	7,175	3,675	175
	– 3,500	– 3,500	– 175
	3,675	175	00

100 + 100 + 5 = 205

9 16,779 ÷ 47 = 357



	200	100	50	7
47	16,779	7,379	2,679	329
	– 9,400	– 4,700	– 2,350	– 329
	7,379	2,679	329	00

200 + 100 + 50 + 7 = 357

10 32,144 ÷ 82 = 392

	200	100	90	2
82	32,144 – 16,400 15,744	15,744 – 8,200 7,544	7,544 – 7,380 164	164 – 164 00

200 + 100 + 90 + 2 = 392

11 23,595 ÷ 39 = 605

	500	100	5
39	23,595 – 19,500 4,095	4,095 – 3,900 295	195 – 195 00

500 + 100 + 5 = 605

12 67,814 ÷ 41 = 1,654

	1,000	600	50	4
41	67,814 – 41,000 26,814	26,814 – 24,600 2,214	2,214 – 2,050 164	164 – 164 00

1,000 + 600 + 50 + 4 = 1,654

13 64,158 ÷ 52 = 1,233 (R42)

	1,000	200	30	3
52	64,158 – 52,000 12,158	12,158 – 10,400 1,758	1,758 – 1,560 198	198 – 156 42

1,000 + 200 + 30 + 3 = 1,233

3 Complete the area model, then find the quotient:

1

	20	4
23	552 –460 92	92 – 92 00

552 ÷ 23 = 24

2

	60	3
24	1,522 –1440 82	82 –72 10

1,522 ÷ 24 = 63 (R10)

3

	100	3
45	4,635 – 4,500 135	135 – 135 000

4,635 ÷ 45 = 103

4

	200	40	3
32	7,776 –6,400 1,376	1,376 –1,280 96	96 – 96 00

7,776 ÷ 32 = 243

5

	100	20	3
15	1,856 – 1,500 356	356 – 300 56	56 – 45 11

1,856 ÷ 15 = 123 (R11)

6

	300	10	3
32	10,016 – 9,600 416	416 – 320 96	96 – 96 00

10,016 ÷ 32 = 313

7

	100	100	40	5
35	8,575 −3,500 5,075	5,075 −3,500 1,575	1,575 −1,400 175	175 − 175 000

8,575 ÷ 35 = 245

8

	300	30	30	3
21	7,631 −6,300 1,331	1,331 − 630 701	701 − 630 71	71 − 63 8

7,631 ÷ 21 = 363 (R8)

4 Complete the area model, then complete the table:

	Area Model	Dividend	Divisor	Quotient	Remainder
1	1,000 | 200 | 40 | 8 45: 56,160 − 45,000 = 11,160 | 11,160 − 9,000 = 2,160 | 2,160 − 1,800 = 360 | 360 − 360 = 000	56,160	45	1,248	0
2	200 | 300 | 40 | 2 31: 16,817 − 6,200 = 10,617 | 10,617 − 9,300 = 1,317 | 1,317 − 1,240 = 77 | 77 − 62 = 15	16,817	31	542	15
3	2,000 | 200 | 20 | 2 24: 53,328 − 48,000 = 5,328 | 5,328 − 4,800 = 528 | 528 − 480 = 48 | 48 − 48 = 00	53,328	24	2,222	0
4	300 | 50 | 7 72: 25,716 − 21,600 = 4,116 | 4,116 − 3,600 = 516 | 516 − 504 = 12	25,716	72	357	12
5	100 | 100 | 20 | 20 42: 10,092 − 4,200 = 5,892 | 5,892 − 4,200 = 1,692 | 1,692 − 840 = 852 | 852 − 840 = 12	10,092	42	240	12

5 Estimate the quotient, then find the actual result. Use the strategy you prefer:

1 3,248 ÷ 8 = 406

Actual result

	400	6
8	3,248 – 3,200 48	48 – 48 00

3,248 ÷ 8

Estimate = 3,200 ÷ 8 = 400

2 6,884 ÷ 6 = 1,147 (R2)

Actual result

	1,000	100	40	7
6	6,884 – 6,000 884	884 – 600 284	284 – 240 44	44 – 42 2

6,884 ÷ 6

Estimate = 6,600 ÷ 6 = 1,100

3 36,024 ÷ 9 = 4,002 (R6)

Actual result

	4,000	2
9	36,024 – 36,000 24	24 – 18 6

36,024 ÷ 9

Estimate = 36,000 ÷ 9 = 4,000

4 22,425 ÷ 65 = 345

Actual result

	300	40	5
65	22,425 – 19,500 2,825	2,925 – 2,600 325	325 – 325 000

22,425 ÷ 65

Estimate = 21,000 ÷ 70 = 300

5 3,892 ÷ 83 = 46 (R74)

Actual result

	40	6
83	3,892 – 3,320 572	572 – 498 74

3,892 ÷ 83

Estimate = 4,000 ÷ 80 = 50

6 3,511 ÷ 72 = 48 (R55)

Actual result

	40	8
72	3,511 – 2,880 631	631 – 576 55

3,511 ÷ 72

Estimate = 3,500 ÷ 70 = 50

7 9,888 ÷ 24 = 412

Actual result

	400	10	2
	9,888	288	48
24	− 9,600	− 240	− 48
	288	48	00

9,888 ÷ 24

Estimate = 10,000 ÷ 20 = 500

8 107,310 ÷ 42 = 2,555

Actual result

	2,000	500	50	5
	107,310	23,310	2,310	210
42	− 89,000	− 21,000	− 2,100	− 210
	23,310	2,310	210	000

107,310 ÷ 42

Estimate = 100,000 ÷ 40 = 2,500

9 11,310 ÷ 45 = 251 (R15)

Actual result

	200	50	1
	11,310	2,310	60
45	− 9,000	− 2,250	− 45
	2,310	60	15

11,310 ÷ 45

Estimate = 10,000 ÷ 40 = 250

10 16,324 ÷ 53 = 308

Actual result

	300	8
	16,324	424
53	− 15,900	− 424
	424	000

16,324 ÷ 53

Estimate = 15,000 ÷ 50 = 300

Assessment 1 on Lessons 1&2

Unit 4

First: Choose the correct answer:

1 The division problem that expresses the opposite model is ...**1,960 ÷ 8 = 245**

	200	20	20	5
8	1,960	360	200	40
	– 1,600	– 160	– 160	– 40
	360	200	40	0

ⓐ 1,960 ÷ 8 = 2,225 ⓑ 360 ÷ 8 = 245 ⓒ 1,960 ÷ 8 = 245 ⓓ 1,960 ÷ 8 = 605

2 The divisor in the corresponding model is ......**14**...... .

	10	6
14	226	86
	– 140	– 84
	86	2

ⓐ 14 ⓑ 16 ⓒ 226 ⓓ 2

3 The remainder of the division in the opposite model is ...**0**... .

	300	20	6
12	3,912	312	72
	– 3,600	– 240	– 72
	312	72	0

ⓐ 12 ⓑ 326 ⓒ 72 ⓓ 0

4 The quotient in the opposite model is ......**4,035**...... .

	4,000	30	5
63	254,205	2,205	315
	– 252,000	– 1,890	– 315
	220,5	315	0

ⓐ 435 ⓑ 4,305 ⓒ 4,350 ⓓ 4,035

5 If 45 x 12 = 540, then the remainder of 545 ÷ 12 is ...**5**...... .

ⓐ 5 ⓑ 12 ⓒ 45 ⓓ 540

Second: Use the area model to solve the following problems:

1 6,542 ÷ 8

	800	10	7
8	6,542	142	62
	– 6,400	– 80	– 56
	142	62	6

= 817 (R6)

2 3,634 ÷ 12

	300	2
12	3,634	34
	– 3,600	– 24
	34	10

= 302 (R10)

3 144,370 ÷ 45

	3,000	200	8
45	144,370	9,370	370
	– 135,000	– 9,000	– 360
	9,370	370	10

= 3,208 (R10)

Third: Answer the following:

1 A red hat costs 400 LE, which is 4 times as much as a blue hat. How much does a blue hat cost? ......**400 ÷ 4 = 100 LE**...... .

2 There are 138 job applicants for a vacancy. They will need to place the applicants in 6 rooms while they fill out the application. How many people will be in each room? ......**138 ÷ 6 = 23 persons**...... .

Assessment on Concept 1



Unit 4

First: **Choose the correct answer :**

1 The quotient in the opposite model is ...146... .

	100	20	20	6
	3,504	1,104	624	144
24	− 2,400	− 480	− 480	− 144
	1,104	624	144	0

ⓐ 1,226 ⓑ 24 ⓒ 3,504 **ⓓ 146**

2 The remainder of division in the opposite model is ...4... .

	400	10
	6,154	154
15	− 6,000	− 150
	154	4

ⓐ 15 ⓑ 6,154 ⓒ 410 **ⓓ 4**

3 If 45 X 24 = 1,080, then 10,800 ÷ 24 = ...450... .

ⓐ 45 ⓑ 24 **ⓒ 450** ⓓ 240

4 If 26 X 155 + 20 = 4,050, then the remainder of 4,050 ÷ 26 is ...20... .

ⓐ 20 ⓑ 26 ⓒ 155 ⓓ 4,050

Second: **Divide using the strategy you prefer:**

1 45,240 ÷ 9 = 5,026 (R6)

2 23,154 ÷ 6 = 3,859

3 3,096 ÷ 12 = 258

4 78,321 ÷ 26 = 3,012 (R9)

Third: **Complete the following:**

1 45,000 ÷ 5 = 9,000

2 40,000 ÷ ...5... = 8,000

3 340,000 ÷ 34 = 10,000

4 36,000 ÷ 12 = 3,000

Fourth: **Answer the following:**

1 If the profit of one of the shops is 7,280 pounds, and they will be distributed equally among 5 people. What is the share of each person?

7,280 ÷ 5 = 1,456 pounds

2 If 168 pupils are divided equally into groups of 12 pupils each, how many groups can we get?

168 ÷ 12 = 14 groups

Concept 4.2 Dividing by 2-Digit Divisors

Lessons 3-5

Using the Division Algorithm
The Relation Between Division and Multiplication
Multistep Story Problems

1 Divide using the standard division algorithm:

1) 75 ÷ 5 = 15

```
      15
 5 | 75
 -   5
     25
 -   25
     00
```

2) 86 ÷ 3 = 28 (R2)

```
      28
 3 | 86
 -   6
     26
 -   24
     02
```

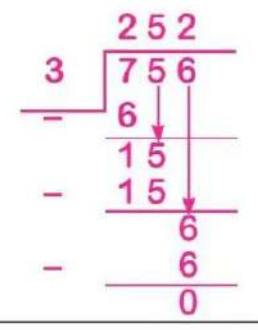
3) 156 ÷ 6 = 26

```
       26
 6 | 156
 -   12
      36
 -    36
      00
```

4) 834 ÷ 4 = 208 (R2)

```
      208
 4 | 834
 -   8
     034
 -    32
       2
```

5) 756 ÷ 3 = 252



```
      252
 3 | 756
 -   6
     15
 -   15
       6
 -     6
       0
```

6) 917 ÷ 7 = 131

```
      131
 7 | 917
 -   7
     21
 -   21
       7
 -     7
       0
```

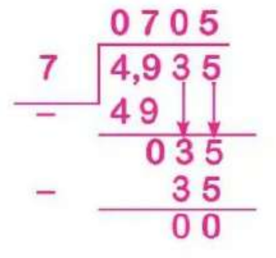
7) 1,475 ÷ 5 = 295

```
      0295
 5 | 1,475
 -   10
       47
 -     45
        25
 -      25
        00
```

8) 3,778 ÷ 8 = 472 (R2)

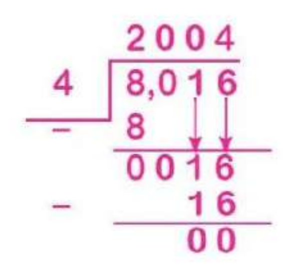
```
      0472
 8 | 3778
 -   32
      57
 -    56
       18
 -     16
        2
```

9) 4,935 ÷ 7 = 705



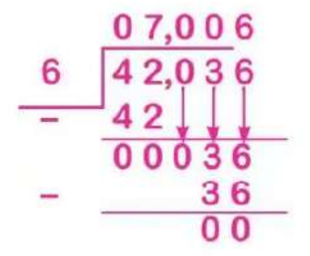
```
      0705
 7 | 4,935
 -   49
      035
 -     35
       00
```

10 8,016 ÷ 4 = 2,004



11 9,177 ÷ 3 = 3,059

12 42,036 ÷ 6 = 7,006

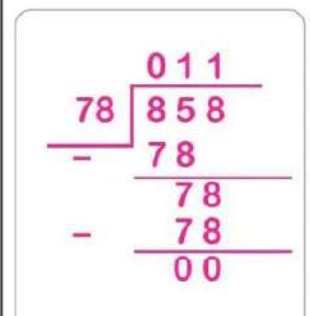


2 Divide using the standard division algorithm:

1 360 ÷ 15 = 24

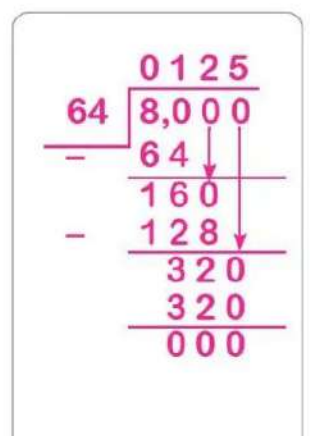
Draft

2 858 ÷ 78 = 11



Draft

3 8,000 ÷ 64 = 125



Draft

4 2,870 ÷ 14 = 205

Draft

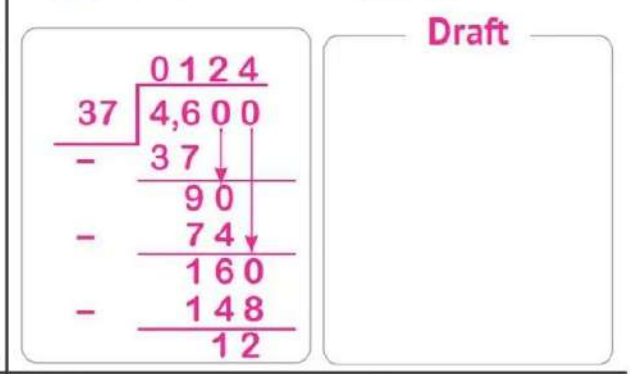
5 3,636 ÷ 12 = 303

Draft

0303
12 | 3,636
− 36
0036
− 36
00

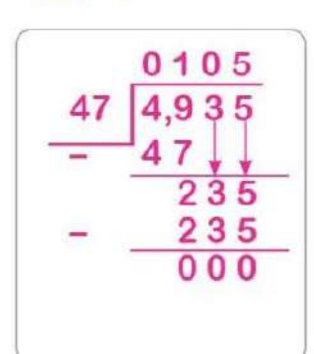
6 4,600 ÷ 37 = 124 (R12)

Draft



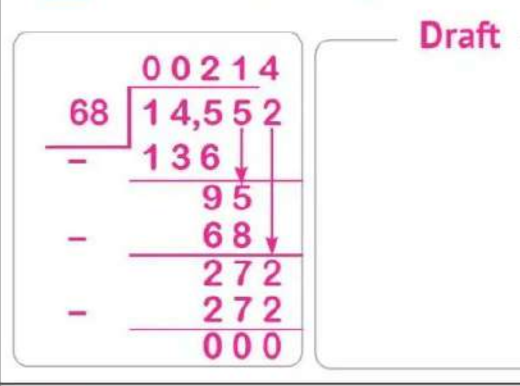
7 4,935 ÷ 47 = 105

Draft



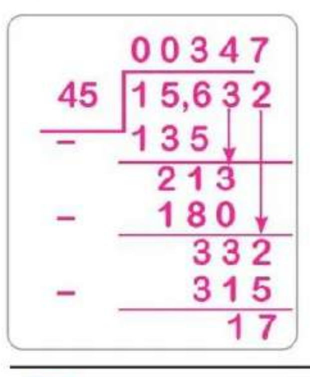
8 14,552 ÷ 68 = 214

Draft



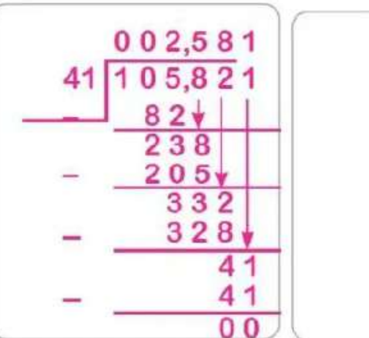
9 15,632 ÷ 45 = 347 (R17)

Draft



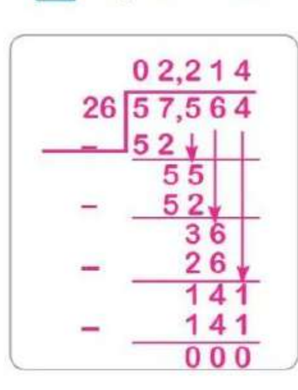
10 105,821 ÷ 41 = 2,581

Draft



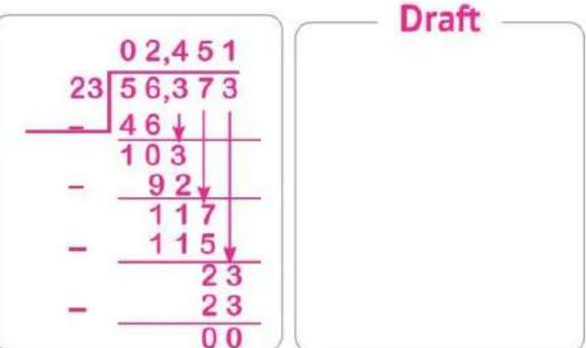
11 57,564 ÷ 26 = 2,214

Draft



12 56,373 ÷ 23 = 2,451

Draft



3 Divide using different division strategies:

	Division	Area Model	Standard Division Algorithm
1	10,455 ÷ 85 = 123	100 | 20 | 3 85 10,455 | 1,955 | 255 −8,500 | −1,700 | − 255 1,955 | 255 | 000	0 0 1 2 3 85) 1 0,4 5 5 − 8 5 1 9 5 − 1 7 0 2 5 5 − 2 5 5 0 0 0
2	3,213 ÷ 17 = 189	100 | 80 | 9 17 3,213 | 1,513 | 153 − 1,700 | −1,360 | − 153 1,513 | 153 | 000	0 1 8 9 17) 3,2 1 3 −1 7 1 5 1 − 1 3 6 1 5 3 − 1 5 3 0 0 0
3	50,312 ÷ 38 = 1,324	1,000 | 300 | 20 | 4 38 50,312 | 12,312 | 912 | 152 − | − | − | − 38,000 | 11,400 | 760 | 152 12,312 | 912 | 152 | 000	0 1,3 2 4 38) 5 0,3 1 2 −3 8 1 2 3 −1 1 4 9 1 − 7 6 1 5 2 − 1 5 2 0 0 0

4 Complete the following:

1. If 35 X 13 = 455, then 455 ÷ 13 = 35 .
2. If 6,048 ÷ 24 = 252, then 24 x 252 = 6,048 .
3. If 61 X 16 = 976, then 980 ÷ 61 = 16 and the remainder is 4 .
4. If 2,000 ÷ 54 = 37, and the remainder is 2, then 37 X 54 = 1,998 .
5. The number that if divided by 23 has a quotient of 212 is 4,876 .
6. The number that if divided by 34 has a quotient of 102, and the remainder is 11 is 3,479 .
7. The number that if multiplied by 12 gives the result 1,260, is 105 .
8. 23 X 102 = 2,346
9. 2,553 ÷ 111 = 23
10. 14,042 ÷ 14 = 1,003

5 Answer the following:

1. A bakery made **140** servings of baklava for a party. If each baking tray holds **12** servings of baklava, how many trays will be needed to hold all the baklava?

   140 ÷ 12 = 11 (R8) → 12 trays are needed

2. In one year, a textile factory used **11,650** meters of cotton, **4,950** fewer meters of silk than cotton, and **3,500** fewer meters of wool than silk. How many meters of fabric were used in all?

   Silk = 11,650 – 4,950 = 6,700 m

   Wool = 6,700 – 3,500 = 3,200 m

   Total = 11,650 + 6,700 + 3,200 = 21,550 m

3 An architect is designing a bridge. The architect has two choices for materials. Mighty Steel sells **5** metric tons (t) of steel for **100,000** LE. Silver Strong Steel sells **3** t of steel for **70,000** LE.

If the architect needs **15** t of steel, how much money will be saved by purchasing from Mighty Steel?

Mighty Steel: 3 X 100,000 = 300,000 LE

Silver Steel: 5 X 70,000 = 350,000 LE

Money saved = 350,000 – 300,000 = 50,000 LE

4 Zeinab ordered **12** packages of fabric squares to make a quilt. Each package has **18** fabric squares, and Zeinab used all the squares for her quilt. Reem made a quilt that was **13** squares wide by **13** squares long. How many fewer squares did Reem use than Zeinab for her quilt?

Zeinab used = 12 X 18 = 216 squares

Reem used = 13 X 13 = 169 squares

The difference = 216 – 169 = 47 squares

5 Nagi sold a total of **30** boxes of sports T-shirts at his store on Monday. These boxes contained only basketball T-shirts and football T-shirts. Each box contained **25** sports T-shirts. He earned **3** LE for each sports T-shirt he sold. He earned a total of **1,134** LE from the football T-shirts he sold. How much money did Nagi earn from the basketball T-shirts he sold?

Profit: (30 X 25) X 3 = 2,250 LE

Basketball = 2,250 – 1,134 = 1,116 LE

6 Malek and his family are going on a road trip to his grandmother's house, which is **465** kilometers away. On Friday, they traveled **124** km. On Saturday, they traveled 210 km. How many kilometers will they need to travel on Sunday to reach his grandmother's house?

The distance = 465 – (124 + 210)

= 465 – 334 = 131 km

7 If the total price of **25** books is **1,875** pounds, what is the price of **36** books?

The price of one book = 1,875 ÷ 25 = 75 pounds

The price of 25 books = 36 X 75 = 2,700 pounds

8 Hussam bought a car and paid **85,500** pounds as a down payment (part of the price), and the rest of the car's price is paid in **24** equal monthly installments. If the total price of the car is **163,500** pounds, what is the value of each installment?

The remaining money = 163,500 – 85,500 = 78,000 pounds

Value of each installment = 78,000 ÷ 24 = 3,250 pounds

9 A school has **456** boys and **419** girls. It is intended to divide boys and girls equally into 25 classes in the school. How many students will be in each class?

Total number of students = 456 + 419 = 875 students

Number of students in each class = 875 ÷ 25 = 35 students

10 A rectangular garden with dimensions of **124** meters by **85** meters, divided into rectangular planting basins, each of which is **62** square meters. How many basins are in the garden?

The area of land = 124 X 85 = 10,540 square meters

The number of basins = 10,540 ÷ 62 = 170 basins

Assessment on Concept 2



Unit 4

First: **Choose the correct answer:**

1. The quotient in the following division model is ...437... .

ⓐ 5,248
ⓑ 12
ⓒ 4
ⓓ 437 ✓

```
     0437
12 ) 5,248
   -  48
      44
   -  36
      88
   -  84
       4
```

2. The divisor in the following division model is ...25... .

ⓐ 4,528
ⓑ 25 ✓
ⓒ 3
ⓓ 181

```
     0181
25 ) 4,528
   -  25
     202
   - 200
      28
   -  25
       3
```

3. The remainder in the following division model is ...26... .

ⓐ 954
ⓑ 32
ⓒ 26 ✓
ⓓ 29

```
     029
32 ) 954
   -  64
     314
   - 288
      26
```

4. From the following division model, 802 = 22 X 36 + 10

ⓐ 22 X 36 + 10 ✓
ⓑ 22 + 36 X 10
ⓒ 22 X 36 X 10
ⓓ 22 + 36 + 10

```
     036
22 ) 802
   -  66
     142
   - 132
      10
```

5. 24,000 ÷ 600 = ...40...

ⓐ 4 ⓑ 40 ✓ ⓒ 400 ⓓ 4,000

Second: **Complete the following:**

1. If 4 X 60 = 240, then 400 X 600 = 240,000
2. 450,000 ÷ ...500... = 900
3. If 24 X 15 = 360, then the remainder of 375 ÷ 15 is ...0... .
4. If 248 ÷ 12 = 20 (R 8), then 12 X 20 + ...8... = 248.
5. 60 X 300 ...18,000... .

Third: **Answer the following:**

- There are **205** people at a concert. After the concert, **40** people left in cars, the rest of them wanted to go home by a microbus. If the load of each microbus is **11** people, how many microbuses are needed for everyone to get home?

The remaining people = 205 – 40 = 165 persons
Number of microbuses = 165 ÷ 11 = 15 microbuses

Unit 5 Multiplication and Division with Decimals

Concept 5.1 Multiplying Decimals

Lessons 1&2 Multiplying by Powers of Ten / Multiplying Decimals by Whole Numbers

1 Find the product of:

1 12 X 10 =	120	2 9 X 100 =	900
3 101 X 1,000 =	101,000	4 65 X 0.1 =	6.5
5 26 X 0.01 =	0.26	6 17 X 0.001 =	0.017
7 0.5 X 10 =	5	8 0.75 X 100 =	75
9 0.256 X 1,000 =	256	10 0.2 X 0.1 =	0.02
11 0.36 X 0.01 =	0.0036	12 0.12 X 0.001 =	0.00012
13 3.25 X 10 =	32.5	14 4.12 X 100 =	412
15 3.19 X 1,000 =	3,190	16 42.12 X 0.1 =	4.212
17 55.12 X 0.01 =	0.5512	18 36.01 X 0.001 =	0.03601
19 0.02 X 10 =	0.2	20 0.36 X 100 =	36
21 0.17 X 1,000 =	170	22 6.35 X 0.1 =	0.635
23 42.14 X 0.01 =	0.4214	24 3.1 X 0.001 =	0.0031

2 Find the product of:

1 25 X 0.5 =	12.5	2 12 X 0.2 =	2.4
3 9 X 1.35 =	12.15	4 12 X 0.07 =	0.84

5	2.6 X 0.6 = 1.56	6	17 X 0.001 = 0.017
7	3.33 X 5 = 16.65	8	9.56 X 9 = 86.04
9	253 X 0.003 = 0.759	10	0.008 X 5 = 0.04
11	4.5 X 0.09 = 0.405	12	6.35 X 3 = 19.05
13	2.4 X 12 = 28.8	14	0.45 X 13 = 5.85
15	3.7 X 22 = 81.4	16	27 X 2.1 = 56.7
17	4.3 X 52 = 223.6	18	20.5 X 12 = 246
19	12.4 X 11 = 136.4	20	45 X 2.07 = 93.15
21	0.365 X 23 = 8.395	22	0.15 X 124 = 18.6
23	3.02 X 12 = 36.24	24	1.12 X 36 = 40.32

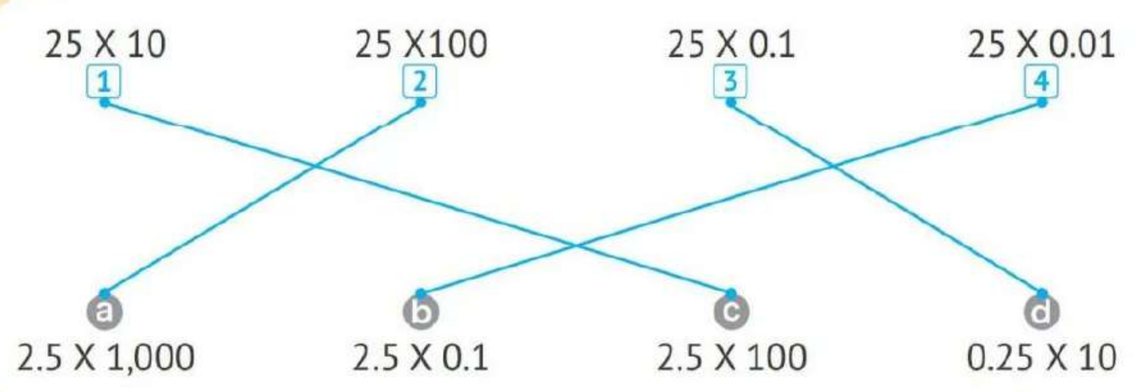
3 Complete the following:

1	5 X 10 = 50	2	33 X 100 = 3,300
3	20 X 1,000= 20,000	4	7 X 0.1 = 0.7
5	3 X 0.01 = 0.03	6	2 X 0.001 = 0.002
7	0.5 X 10 = 5	8	0.5 X 100 = 50
9	0.7 X 1,000 = 700	10	2.4 X 0.1 = 0.24
11	2.4 X 0.01 = 0.024	12	17 X 0.001 = 0.017
13	42 X 10 = 420	14	23 X 100 = 2,300
15	65 X 1,000 = 65,000	16	14 X 0.1 = 1.4
17	6.3 X 0.01 = 0.063	18	32 X 0.001 = 0.032
19	0.05 X 1,000 = 50	20	63.7 X 100 = 6,370
21	2.05 X 10 = 20.5	22	0.06 X 0.1 = 0.006
23	3.7 X 1,000 = 3,700	24	20 X 0.001 = 0.02

4 Compare using (<, = or >):

1. 25 X 0.1 = 0.25 X 10
2. 50 X 0.01 < 0.5 X 100
3. 73.2 X 0.1 < 0.732 X 100
4. 36 X 0.1 < 3.6 X 10
5. 56 X 11 > 5.6 X 11
6. 45 X 0.12 < 4.5 X 12
7. 1.44 X10 = 1.2 X 12
8. 75 X 0.01 = 0.25 X 3
9. 15 X 0.15 > 2.25 X 0.1
10. 9 X 0.9 > 8.1 X 0.01

5 Match:



6 Complete the following:

1. If 6 X 25 = 150, then 6 X 0.25 = ... **1.5** ....
2. If 8 X 50 = 400, then 0.8 X 5 = ... **4** ....
3. If 5 X 24 = 120, then 5 X 2.4 = ... **12** ....
4. If 1.2 X 25 = 30, then 12 X 0.25 = ... **3** ....
5. If 0.24 X 5 = 1.2, then 2.4 X 5 = ... **12** ....
6. When multiplying by 0.01, we move the decimal point ...... **2** ...... places to the ...... **left** ....
7. When multiplying by ...... **10** ......, we move the decimal point one place to the right
8. When multiplying by ...... **0.001** ......, we move the decimal point 3 places to the left.
9. When multiplying 2.45 x 100, the place value of 4 changes from ...... **0.4** ...... to ...... **40** ....
10. 1.5 X ...... **20** ...... = 30
11. 10.5 X ...... **0.1** ...... = 1.05
12. 0.25 X ...... **800** ...... = 200
13. 7.5 X ...... **2** ...... = 15
14. 11 X ...... **1.1** ...... = 12.1
15. 0.31 X ...... **3** ...... = 0.93

Assessment 1 on Lessons 1&2

Unit 5

First: Find the product of:

1. 8 X 100 = 800
2. 3 X 0.1 = 0.3
3. 45 X 0.001 = 0.045
4. 3.5 X 4 = 14
5. 5.25 X 100 = 525

Second: Compare using (<, = or >):

1. 5 X0.3 = 0.5 X 3
2. 24 X 0.2 > 8 X 0.06
3. 1.2 X 100 > 0.12 X 10
4. 635 X 0.1 < 6.35 X 100
5. 825 X 0.01 < 8.25 X 10

Third: Match:

1. 2.35 X 10	a. 23.5 X 10
2. 2.35 X 0.1	b. 23.5 X 1
3. 2.35 X 100	c. 23.5 X 100
4. 2.35 X 1,000	d. 23.5 X 0.01

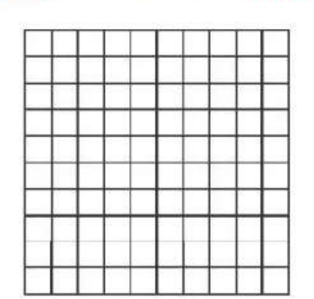
Fourth: Complete the following:

1. If 5 X 24 = 120, then 5 X 2.4 = 12
2. If 0.8 X 421 = 336.8, then 8 X 4.21 = 33.68
3. When multiplying a whole number by 0.001, we move the decimal point 3 places to the left
4. 0.5 X 0.1 = 0.05
5. 0.092 X 100 = 9.2

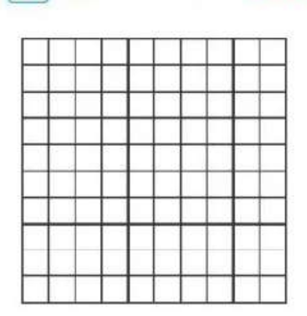
Lessons 3&4 Multiplying Tenths by Tenths
Multiplying Using the Area of Rectangle Model

1 Use the Base 10 grids to find the product:

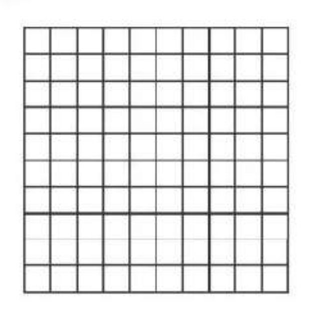
1 0.2 X 0.3 = 0.06



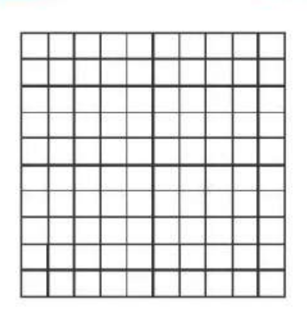
2 0.4 X 0.4 = 0.16



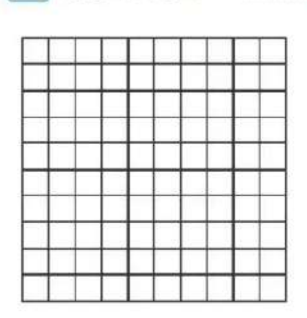
3 0.6 X 0.8 = 0.48



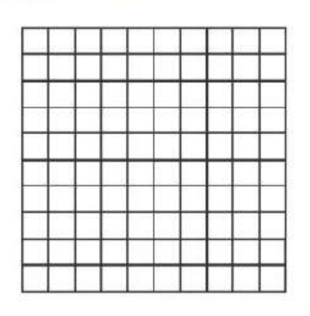
4 0.7 X 0.1 = 0.07



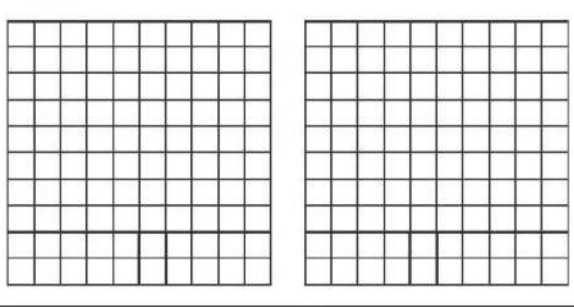
5 0.3 X 0.4 = 0.12



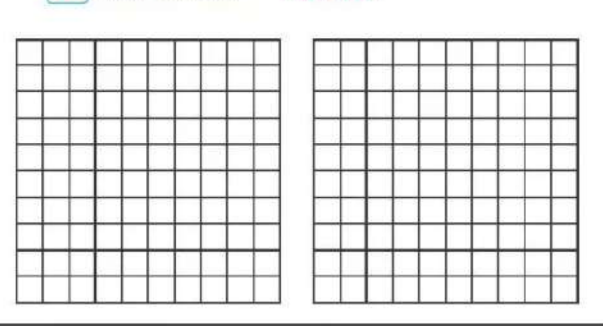
6 0.5 X 0.9 = 0.45



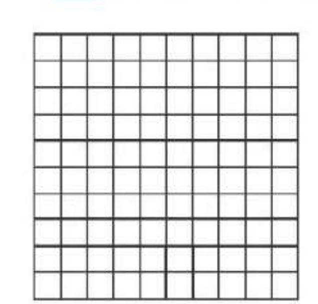
7 1.4 X 0.2 = 0.28

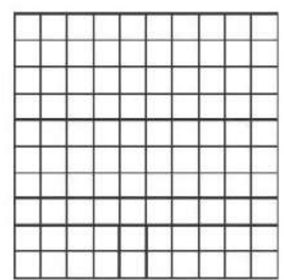


8 1.5 X 0.3 = 0.45

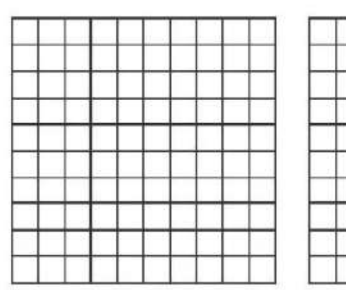


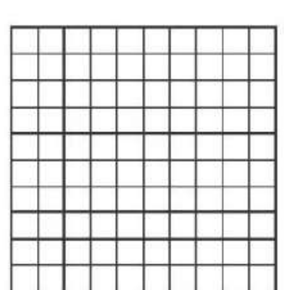
9 1.1 X 0.7 = 0.77



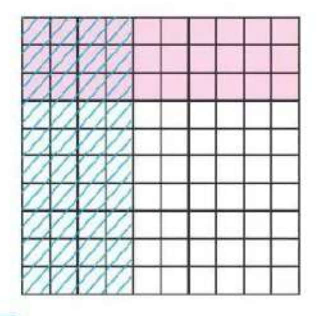


10 0.3 X 1.6 = 0.48

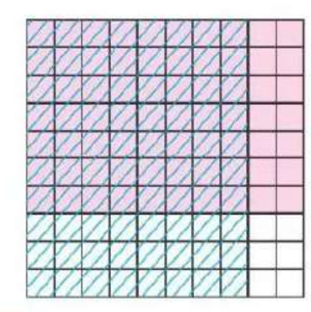




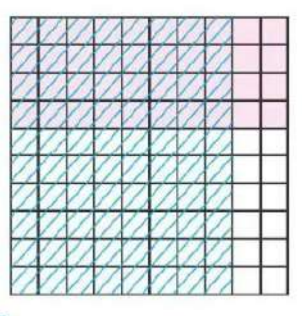
2 **Write the multiplication problem represented by each of the following Base 10 grids, then find the result:**



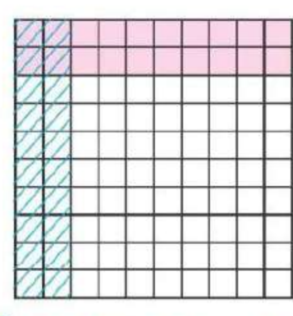
1 0.3 X 0.4 = 0.12



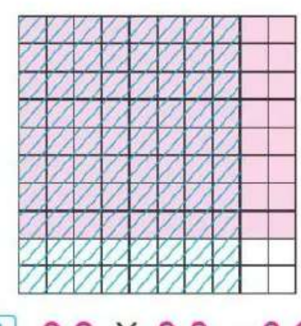
2 0.7 X 0.8 = 0.56



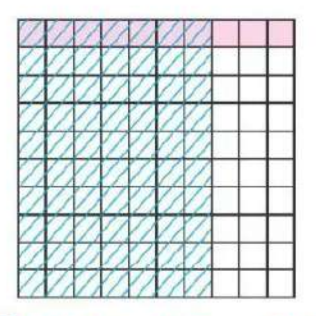
3 0.4 X 0.8 = 0.32



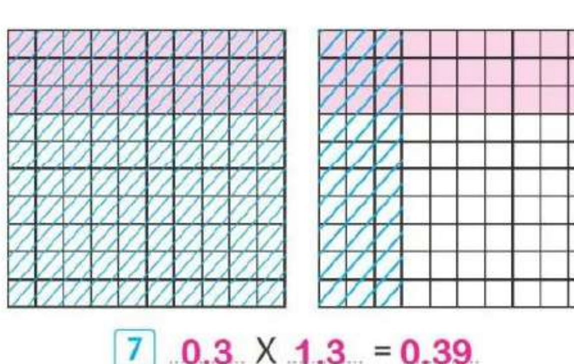
4 0.2 X 0.2 = 0.04



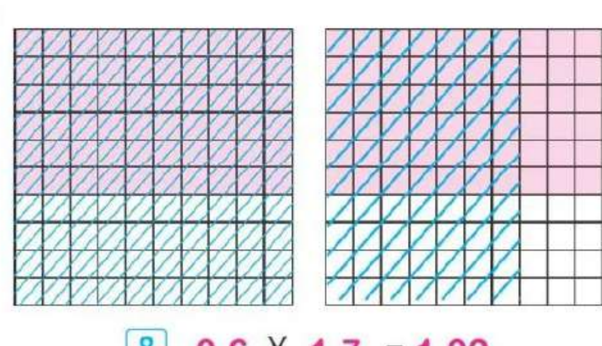
5 0.8 X 0.8 = 0.64



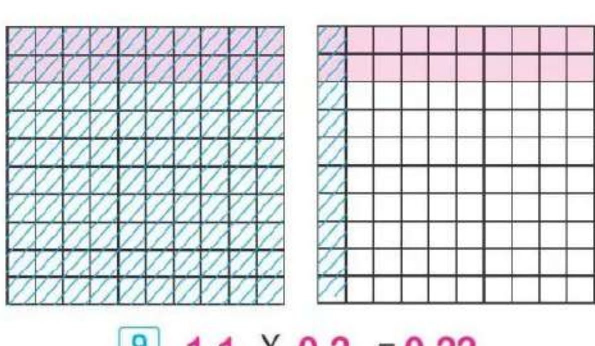
6 0.1 X 0.7 = 0.07



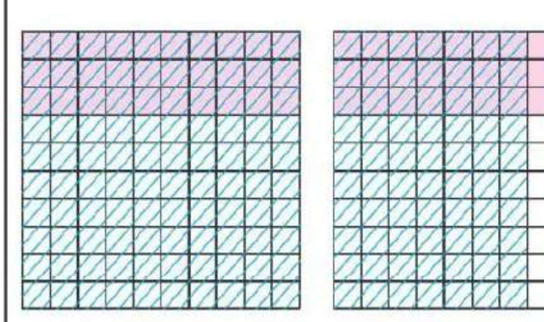
7 0.3 X 1.3 = 0.39



8 0.6 X 1.7 = 1.02



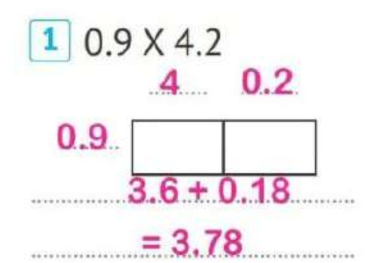
9 1.1 X 0.2 = 0.22



10 0.3 X 1.7 = 0.51

3 Multiply using the **area model**:

1 0.9 X 4.2



4 | 0.2

0.9

3.6 + 0.18

= 3.78

2 0.08 X 4.7

4 | 0.7

0.08

0.32 + 0.056

= 0.376

3 6 X 20.3

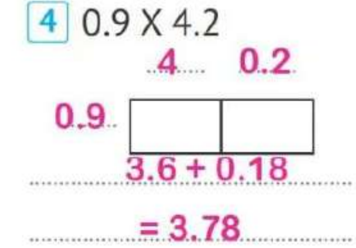
20 | 0.3

6

120 + 1.8

= 121.8

4 0.9 X 4.2



4 | 0.2

0.9

3.6 + 0.18

= 3.78

5 0.6 X 3.04

3 | 0.04

0.6

1.8 + 0.024

= 1.824

6 9 X 20.3

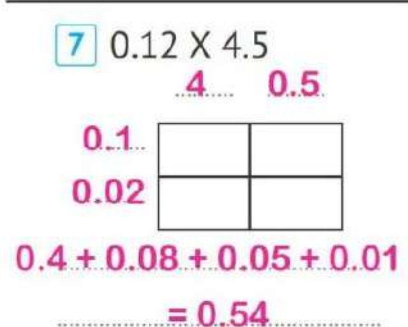
20 | 0.3

9

180 + 2.7

= 182.7

7 0.12 X 4.5



4 | 0.5

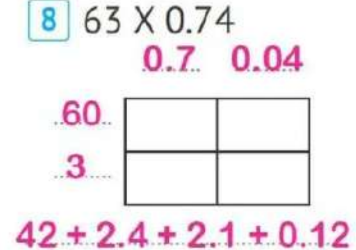
0.1

0.02

0.4 + 0.08 + 0.05 + 0.01

= 0.54

8 63 X 0.74



0.7 | 0.04

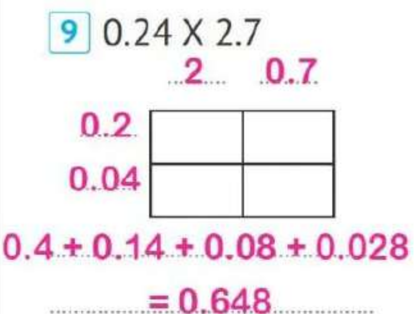
60

3

42 + 2.4 + 2.1 + 0.12

= 46.62

9 0.24 X 2.7



2 | 0.7

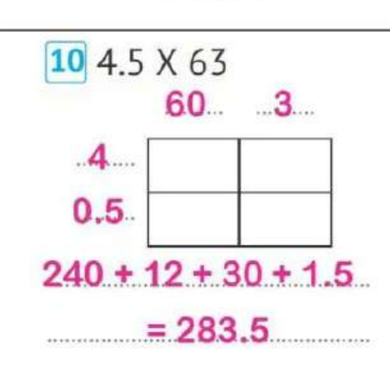
0.2

0.04

0.4 + 0.14 + 0.08 + 0.028

= 0.648

10 4.5 X 63



60 | 3

4

0.5

240 + 12 + 30 + 1.5

= 283.5

11 40.5 X 3.5

3 | 0.5

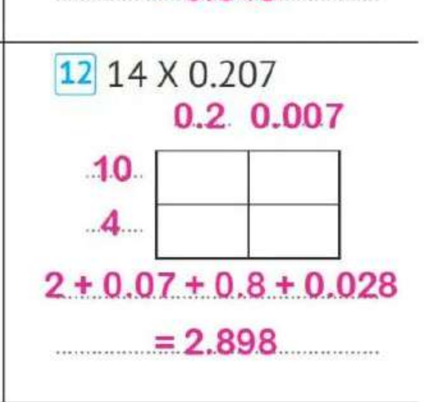
40

0.5

120 + 20 + 1.5 + 0.25

= 141.75

12 14 X 0.207



0.2 | 0.007

10

4

2 + 0.07 + 0.8 + 0.028

= 2.898

13 3.5 X 42.4



40 | 2 | 0.4

3

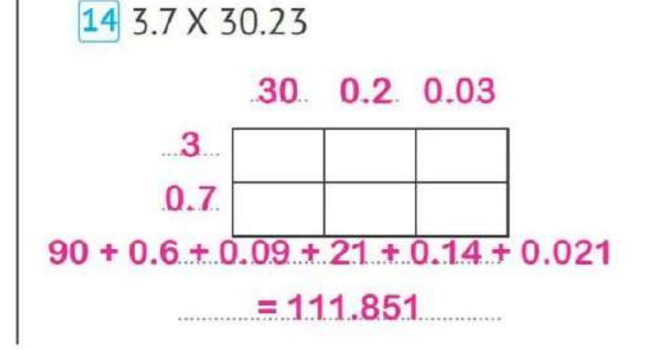
0.5



120 + 6 + 1.2 + 20 + 1 + 2

= 148.4

14 3.7 X 30.23



30 | 0.2 | 0.03

3

0.7

90 + 0.6 + 0.09 + 21 + 0.14 + 0.021

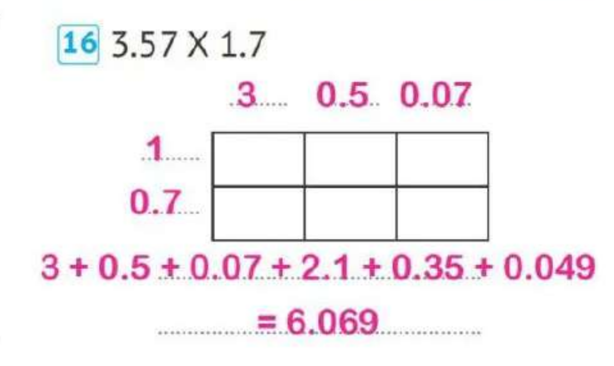
= 111.851

15 0.14 X 17.3

	10	7	0.3
0.1			
0.04			

1 + 0.7 + 0.03 + 0.4 + 0.28 + 0.012

= 2.422



16 3.57 X 1.7

	3	0.5	0.07
1			
0.7			

3 + 0.5 + 0.07 + 2.1 + 0.35 + 0.049

= 6.069

4 **Write the multiplication problem that expresses the following area models, and then solve them:**

1 0.4 X 0.52 = 0.208

	0.5	0.02
0.4		

0.2 + 0.008

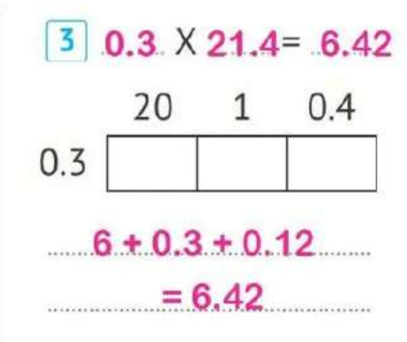
= 0.208

2 7 X 2.3 = 16.1

	2	0.3
7		

14 + 2.1

= 16.1



3 0.3 X 21.4 = 6.42

	20	1	0.4
0.3			

6 + 0.3 + 0.12

= 6.42

4 0.27 X 4.3 = 1.161

	4	0.3
0.2		
0.07		

0.8 + 0.06 + 0.28 + 0.021

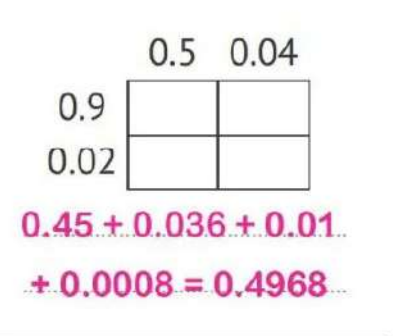
= 1.161

5 3.5 X 45 = 157.5

	40	5
3		
0.5		

120 + 15 + 20 + 2.5

= 157.5

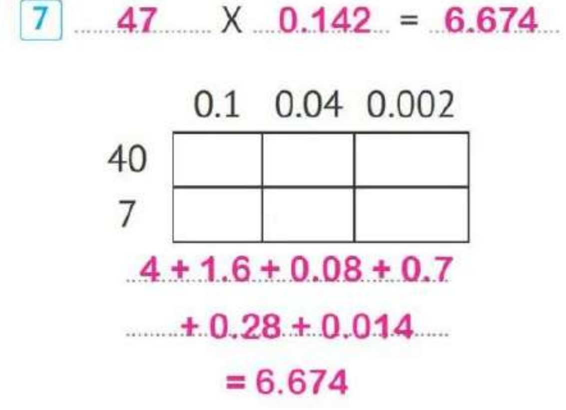


6 0.92 X 0.54 = 0.4968

	0.5	0.04
0.9		
0.02		

0.45 + 0.036 + 0.01

+ 0.0008 = 0.4968



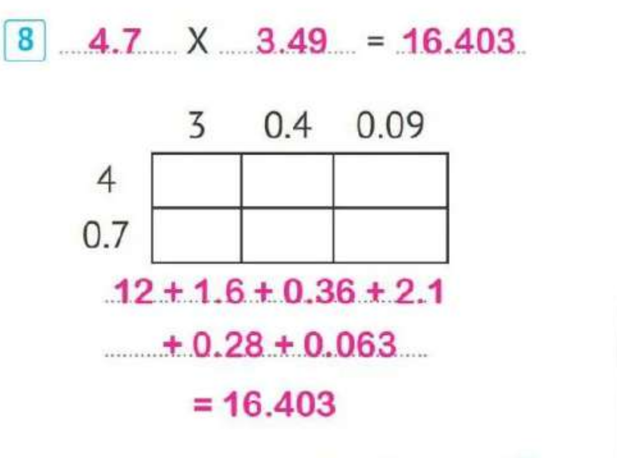
7 47 X 0.142 = 6.674

	0.1	0.04	0.002
40			
7			

4 + 1.6 + 0.08 + 0.7

+ 0.28 + 0.014

= 6.674



8 4.7 X 3.49 = 16.403

	3	0.4	0.09
4			
0.7			

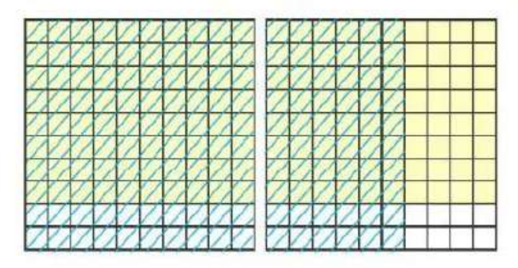
12 + 1.6 + 0.36 + 2.1

+ 0.28 + 0.063

= 16.403

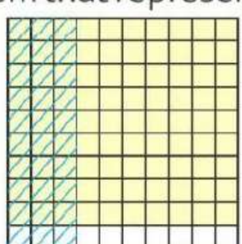
5 Choose the correct answer:

1 The multiplication problem that represents the opposite model is ....



(16 X 80 or 1.6 X 0.8 or 160 X 80 or 1.6 X 8)

2 The multiplication problem that represents the opposite model is ....



(3 X 9 or 30 X 0.9 or 30 X 90 or 0.3 X 0.9)

3 The multiplication problem that represents the opposite model is ....

	7	0.3	0.02
50			
0.3			

(50.3 X 7.32 or 5.3 X 7.32 or 5.3 X 73.2 or 50.3 X 73.2)

4 The multiplication problem that represents the opposite model is ....

	20	2	0.3
5			
0.07			

(5.7 X 22.3 or 57 X 223 or 5.07 X 202.3 or 5.07 X 22.3)

5 If 12 X 45 = 540, then .... X 0.45 = 540

(1.2 or 0.12 or 120 or 1,200)

6 If 1.3 X 7.2 = 9.36, then 13 X .... = 93.6

(0.72 or 7.2 or 72 or 720)

7 35 X 0.2 ...... 3.5 X 2 (> or = or < or ≤)

8 3.6 X 0.01 ...... 36 X 10 (> or = or < or ≤)

Assessment 2 on Lessons 3&4

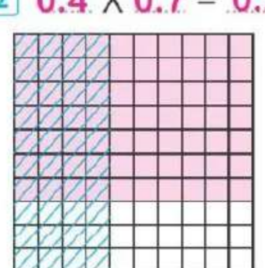
Unit 5

First: Write the multiplication problem represented by each of the following Base 10 grids, then find the product:

1. 0.2 X 0.2 = 0.04



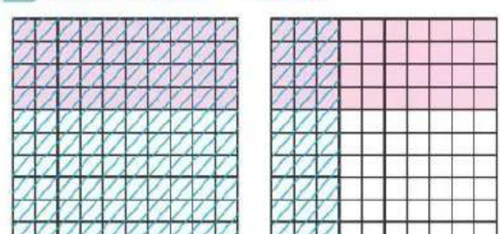
2. 0.4 X 0.7 = 0.28



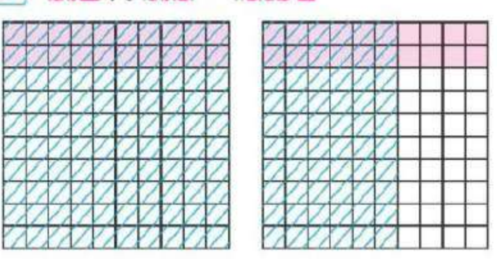
3. 0.6 X 0.2 = 0.12



4. 0.4 X 1.3 = 0.52



5. 0.2 X 1.6 = 0.32



Second: Write the multiplication problems that express the following area models, and then solve them:

	2	0.9
0.7		

1. 2.9 X 0.7 = 2.3

	10	0.08
90		
0.2		

2. 10.08 X 90.2 = 909.216

	800	50	2
0.2			
0.04			

3. 852 X 0.24 = 204.48

Third: Complete the following:

1. If 2 X 45 = 90, then 0.2 X 0.45 = 0.09
2. If 5 X 3 = 15, then 5 X 0.3 = 1.5
3. If 625 X 4 = 2,500, then 6.25 X 0.4 = 2.5
4. If 2.5X 1.6 = 4, then 25 X 16 = 400

Fourth: Answer the following:

- Marwa is a museum curator. She wants to repaint the museum walls, which are measured in meters. There are **four** walls, each is measuring **3.8 m × 15.2 m**. Estimate how many square meters she needs to cover with paint. Explain your answer.

The area of one wall = 15 X 4 = 60 square meter
The painted area = 60 X 4 = 240 square meter

Lessons 5&6 Multiplying Decimals Through the Hundredths Place-Multiplying Decimals Through the Thousandths Place

1 Multiply (35 x 12) using the standard algorithm, then complete:

1. 3.5 X 12 = 42
2. 35 X 0.12 = 4.2
3. 3.5 X 1.2 = 4.2
4. 0.35 X 1.2 = 0.42
5. 3.5 X 0.12 = 0.42
6. 0.35 X 12 = 4.2
7. 35 X 1.2 = 42
8. 0.35 X 0.12 = 0.042

```
    3 5
X   1 2
-------
    7 0
+ 3 5 0
-------
  4 2 0
```

2 Multiply (105 X 24) using the standard algorithm, then complete:

1. 105 X 2.4 = 252
2. 1.05 X 24 = 25.2
3. 105 X 0.24 = 25.2
4. 0.105 X 24 = 2.52
5. 105 X 0.024 = 2.52
6. 10.5 X 2.4 = 25.2
7. 10.5 X 24 = 252
8. 1.05 X 0.24 = 0.252

```
      1 0 5
X       2 4
-----------
      4 2 0
+ 2,1 0 0
-----------
  2,5 2 0
```

3 Multiply using the standard algorithm:

1	2	3	4
36 X 0.7 = 25.2	0.368 X 5 = 1.84	6.07 X 9 = 54.63	115.2 X 0.06 = 6.912

5	6	7	8
4.57 X 5.9	3.336 X 21	37.07 X 13	12.25 X 3.5
4,113	3,336	11,121	6,125
+ 22,850	+ 66,720	+ 37,070	+ 36,750
26.963	70.056	481.91	42.875

9	10	11	12
6.35 X 1.7	3,021 X 0.032	20.02 X 3.6	3.27 X 24
4,445	6,021	12,012	1,308
+ 6,350	+ 90,630	+ 60,060	+ 6,540
10.795	96.672	72.072	78.48

4 Compare using (<, = or >):

1	2.8 X 3.4	=	0.28 X 34	2	6.3 X 12	>	0.63 X 12
3	6.4 X 0.37	<	64 X 3.7	4	2.2 X 2.2	=	0.22 X 22
5	4.5 X 0.2	<	45 X 20	6	6.34 X 32	=	63.4 X 3.2
7	0.45 X 0.1	<	4.5 X 10	8	67 X 10.2	>	67 X 1.2
9	0.5 X 0.8	>	0.2 X 0.2	10	3.2 X 3.2	<	0.32 X 320

5 Answer the following:

1. Nada bought **26** meters of fabric. If the price of one meter was **43.5** pounds, how many pounds did Nada pay?

   Nada paid = 26 X 43.5 = 1,131 pounds .

2. Khaled bought **9.5** liters of juice with the price of **12.7** pounds per liter. How many pounds did Khaled pay?

   Khaled paid = 9.5 X 12.7 = 120.65 pounds .

3. If a pizza costs **22.25** LE, how much does **12** pizzas of the same kind cost?

   The price = 12 X 22.25 = 267 LE

   .

4. A merchant bought two types of cloth, one at a price of **92.5** pounds per square meter, and the other at a price of **58** pounds per square meter. If he bought **10** meters of the first type and **6.5** meters of the second type, how many pounds did the merchant pay?

   10 X 92.5 = 925 pounds, 6.5 X 58 = 377 pounds

   The merchant paid = 925 + 377 = 1,302 pounds .

5. Malik walked **7.9** km on Friday and **3.6** km on Saturday, then Malik repeated that every weekend for **6** weeks. How many total kilometers did Malek walk in **6** weeks?

   7.9 + 3.6 = 11.5 km

   11.5 X 6 = 69 km .

Assessment 3 on Lessons 5&6

Unit 5

First: Complete the following:

1. If 25 X 33 = 825, then 0.25 X 3.3 = 0.825
2. If 137 X 21 = 2,877, then 1.37 X 2.1 = 2.877
3. 0.02 X 0.03 = 0.0006
4. 0.3 X 0.03 = 0.009
5. 0.2 X 0.3 X 0.5 = 0.03

Second: Use the standard algorithm to multiply:

1	2	3
5.6	0.73	2.08
X 2.3	X 2.8	X 62
168	584	416
+ 1120	+ 1460	+ 12480
12.88 ≈ 12.9	2.044 ≈ 2.04	128.96 ≈ 129
(To the nearest Tenth)	(To the nearest Hundredth)	(To the nearest whole number)

Third: If 452 X 27 = 12,204, then:

1. 4.52 X 2.7 = 12.204
2. 0.452 X 27 = 12.204
3. 45.2 X 27 = 1220.4
4. 4.52 X 2.7 = 12.204
5. 4.52 X 0.27 = 1.2204
6. 0.452 X 0.27 = 0.12204

Fourth: Compare using (<, = or >):

1. 0.8 X 0.3 > 0.8 X 0.03
2. 54 X 1.1 > 0.54 X 11
3. 0.45 X 10 = 45 X 0.1
4. 2.5 X 2.5 < 625 X 0.1

Lessons 7–9

Decimals and the Metric System
Measurement, Decimals, and Powers of Ten
Solving Multistep Story Problems

1 Complete:

1	8,523 mL =	8,523	X	0.001	=	8.523	liters
2	954 mL =	954	X	0.001	=	0.954	liters
3	25 mL =	25	X	0.001	=	0.025	liters
4	78 liters =	78	X	1,000	=	78,000	mL
5	2.5 liters =	2.5	X	1,000	=	2,500	mL
6	1.24 liters =	1.24	X	1,000	=	1,240	mL
7	23 km =	23	X	1,000	=	23,000	meters
8	0.753 km =	0.753	X	1,000	=	753	meters
9	235 m =	235	X	0.001	=	0.235	km
10	3,235 m =	3,235	X	0.001	=	3.235	km
11	32 m =	32	X	100	=	3,200	cm
12	3.35 m =	3.35	X	100	=	335	cm
13	0.12 m =	0.12	X	10	=	1.2	dm
14	45 cm =	45	X	0.01	=	0.45	m
15	1,247 cm =	1,247	X	0.01	=	12.47	m
16	7.5 dm =	7.5	X	10	=	75	cm
17	7.5 kg =	7.5	X	1,000	=	7,500	g
18	85 g =	85	X	0.001	=	0.085	kg
19	235 mm =	235	X	0.1	=	23.5	cm
20	2.8 cm =	2.8	X	10	=	28	mm

2 Choose the correct answer:

1. 6.52 kg = **6,520** g (65.2 or 652 or [6,520] or 65,200)
2. 549 g = **0.549** kg (5,490 or 5.49 or 54.9 or [0.549])
3. 62 mL = **0.062** L (620 or 6.2 or 0.62 or [0.062])
4. 63.5 liters = **63,500** mL (635 or 6,350 or [63,500] or 635,000)
5. 45 cm = **0.45** meters (4,500 or 450 or 4.5 or [0.45])
6. 0.028 meters = **2.8** cm (0.28 or [2.8] or 28 or 280)
7. 3.2 km = **3,200** m (32 or 0.32 or [3,200] or 0.032)
8. 45 meters = **0.045** km ([0.045] or 4,500 or 4.5 or 450)
9. 4.5 cm = **45** mm ([45] or 0.45 or 450 or 0.045)
10. 256 mm = **25.6** cm (0.256 or 2.56 or [25.6] or 2,560)

3 Compare using (<, = or >):

1	45 kg	>	4,500 g	2	3.25 cm	=	32.5 mm
3	2.5 meters	<	2,500 cm	4	63 liters	>	0.063 mL
5	5,000 m	>	0.5 km	6	0.02 km	>	2,000 mm
7	11.5 L	<	15.1 L	8	50 cm	>	5 mm
9	600 m	<	6 km	10	0.025 kg	>	2.5 g

4 Put (✓) in front of the correct statement, and (✗) in front of the wrong statement:

1	78 kg = 7,800 g	(✗)	2	3.5 m = 350 cm	(✓)
3	200 mL = 0.2 liters	(✓)	4	63 km = 0.063 g	(✗)
5	12.5 meters = 1.25 dm	(✗)	6	1 cm = 0.1 mm	(✗)
7	1 cm = 0.01 meters	(✓)	8	25 mL = 0.025 liters	(✓)
9	10.2 mm = 1.02 cm	(✓)	10	45.3 L = 0.453 mL	(✗)

5 Answer the following:

1 Eman wants to know how much her height increased.

In January, she was 1.34 m tall, and at the end of the year she was 145 cm tall. How many centimeters did Eman increase in height?

The increase = 145 – 134 = 11 cm .

2 Hazem bought 7 books, the price of one book is 23.5 pounds. Find what Hazem paid.

Hazem paid = 7 X 23.5 = 164.5 pounds

.

3 A fruit merchant has 5 boxes of mangoes, each weighing 9.5 kg and 3 boxes of peaches, each weighing 4,600 grams.

What is the total weights of the fruits that the trader has?

Weight of mangoes = 5 X 9,500 = 47,500 grams

Weight of peaches = 3 X 4,600 = 13,800 grams

Total = 47,500 + 13,800 = 61,300 grams .

4 If Mazen is 1.64 meters tall and Maryam is 145 centimeters tall.

Find the sum of their heights and the difference between them in cm.

The sum = 145 + 164 = 309 cm

The difference = 164 – 145 = 19 cm .

5 Sami drinks 4 liters of water daily. If he drinks 1.25 liters of water in the morning, and 2,450 milliliters of water in the afternoon, how many liters of water will he drink in the evening?

1,250 + 2,450 = 3,700 mL

4,000 – 3,700 = 300 mL .

Assessment 4 on Lessons 7 – 9

Unit 5

First: Choose the correct answer:

1. 78.5 m = ...7,850...... cm
   - (a) 785
   - (b) 7.85
   - (c) 7,850 ✓
   - (d) 0.785
2. ......0.46...... kg = 460 g
   - (a) 0.46 ✓
   - (b) 460,000
   - (c) 4.60
   - (d) 4,600
3. 5.2 L = ...5,200...... mL
   - (a) 0.052
   - (b) 0.52
   - (c) 52
   - (d) 5,200 ✓
4. 2.56 X ......10...... = 25.6
   - (a) 10 ✓
   - (b) 100
   - (c) 0.1
   - (d) 0.01
5. 0.01 X ......2.5...... = 0.025
   - (a) 0.25
   - (b) 2.5 ✓
   - (c) 25
   - (d) 250

Second: Complete the following:

1. 456 cm = ...456...... X ......0.01...... = ...4.56...... m
2. 5.9 kg = ...5.9...... X ......1,000...... = ...5,900...... g
3. 4,258 cm = ...4,258...... X ......0.01...... = ...42.58...... m
4. ......0.001...... X 85 = 0.085

Third: Compare using (<, = or >):

1. 45 kg (>) 4,500 g
2. 5.02 L (=) 5,020 mL
3. 75 dm (<) 750 m
4. 25 X 0.01 (<) 0.25 X 100

Fourth: Answer the following:

Ali's cat weighs 7 kilograms and his dog weighs 17 kilograms. When Ali took them to the vet, he knew that his cat had gained 0.45 kilograms and his dog had gained 0.12 kilograms. What is the total weight of the two pets now?

The cat: 7 + 0.45 = 7.45 kg ...... The dog: 17 + 0.12 = 17.12 kg

Total = 7.45 + 17.12 = 24.57 kg .

Assessment on Concept 1



Unit 5

First: Choose the correct answer:

1. The multiplication problem that expresses the corresponding model is **0.3 X 0.5**
   - (a) 0.12 X 0.35
   - (b) 1.2 X 3.5
   - (c) 0.3 X 0.5 ✔
   - (d) 30 X 50

2. The area model that expresses 2.5 X 0.35 is ....

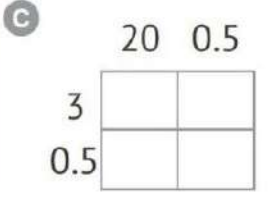
   (a)

	20	5
30		
5		

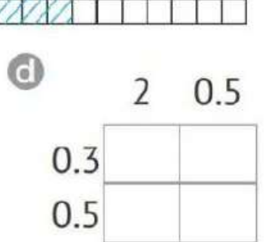
   (b) ✔

	2	0.5
0.3		
0.05		

   (c)

   (d)

3. If 25 X 16 = 400, then 2.5 X 1.6 = **4**
   - (a) 0.04
   - (b) 0.4
   - (c) 4 ✔
   - (d) 40

4. 0.48 liter = **480** milliliter(s).
   - (a) 0.048
   - (b) 4.8
   - (c) 48
   - (d) 480 ✔

5. 3 Tenths X 8 Hundredths = **0.024**
   - (a) 0.024 ✔
   - (b) 0.24
   - (c) 24
   - (d) 240

Second: Complete the following:

1. 86 X **0.001** = 0.086
2. If 24 X 12 = 288, then 2.4 X 0.012 = **0.0288**
3. 25.7 X 9.8 ⟶ Estimate **26** X **10** = **260** (To the nearest whole number)
4. 4,258 g = **4,258** X **0.001** = **4.258** kg
5. 0.7 X 0.8 X 0.5 = **0.28**

Third: Compare using (<, = or >):

1. 0.2 X 0.01 **<** 0.4 X 0.05
2. 6.2 X 100 **>** 0.062 X 10
3. 75 cm **<** 750 m
4. 1.2 X 3.5 **<** 0.12 X 350

Fourth: Answer the following:

1. The length of the route taken by the river bus is 58.7 km. How many kilometers would the river bus travel if it traveled this route 9 times a day?

   The distance = 58.7 X 9 = 528.3 km

2. Souad bought 20 meters of fabric. If the price of one meter is 65.5 pounds, what is the price of the whole fabric?

   The price = 20 X 65.5 = 1,310 pounds

Concept 5.2 Dividing Decimals

Lessons 10&11 Dividing by Powers of Ten / Patterns and Relationships in Powers of Ten

1 Divide:

1. 17 ÷ 10 = 1.7
2. 8 ÷ 100 = 0.08
3. 102 ÷ 1,000 = 0.102
4. 45 ÷ 0.1 = 450
5. 23 ÷ 0.01 = 2,300
6. 45 ÷ 0.001 = 45,000
7. 0.6 ÷ 10 = 0.06
8. 0.12 ÷ 100 = 0.0012
9. 125 ÷ 1,000 = 0.125
10. 0.9 ÷ 0.1 = 9
11. 0.27 ÷ 0.01 = 27
12. 0.42 ÷ 0.001 = 420
13. 4.24 ÷ 10 = 0.424
14. 8.13 ÷ 100 = 0.0813
15. 4.17 ÷ 10 = 0.417
16. 61.75 ÷ 0.1 = 617.5
17. 45.72 ÷ 0.01 = 4,572
18. 27.04 ÷ 0.001 = 27,040
19. 0.07 ÷ 10 = 0.007
20. 0.96 ÷ 100 = 0.0096
21. 34 ÷ 1,000 = 0.034
22. 5.63 ÷ 0.1 = 56.3
23. 63.75 ÷ 0.01 = 6,375
24. 4.2 ÷ 0.001 = 4,200
25. 6.35 X 0.1 = 0.635
26. 42.14 X 0.01 = 0.4214
27. 31 X 0.001 = 0.031

2 Complete the following:

1. 8 ÷ 10 = 0.8
2. 632 ÷ 100 = 6.32
3. 20,000 ÷ 1,000= 20
4. 6 ÷ 0.1 = 60
5. 4 ÷ 0.01 = 400
6. 0.3 ÷ 0.001 = 300
7. 3 ÷ 10 = 0.3
8. 7 ÷ 100 = 0.07

9 ...9... ÷ 1,000= 0.009

10 ...0.24... ÷ 0.1 = 2.4

11 ...0.025... ÷ 0.01 = 2.5

12 ...0.96... ÷ 0.001 = 960

13 0.25 ÷ ...0.01... = 25

14 0.58 ÷ ...0.01... = 58

15 75 ÷ ...0.001... = 75,000

16 23 ÷ ...10... = 2.3

17 7.5 ÷ ...100... = 0.075

18 37 ÷ ...1,000... = 0.037

19 0.07 ÷ ...0.001... = 70

20 45.2 ÷ ...0.01... = 4,520

21 3.06 ÷ ...0.1... = 30.6

22 0.03 ÷ ...10... = 0.003

23 3.9 ÷ ...0.001... = 3,900

24 50 ÷ ...1,000... = 0.05

3 Complete the following patterns:

1 12.5 ÷ 0.1 = 12.5 X 10 = 125

2 600 ÷ 1,000 = 600 X 0.001 = 0.6

3 225 ÷ 10 = 225 X 0.1 = 22.5

4 225 ÷ 100 = 225 X 0.01 = 2.25

5 3.01 ÷ 0.01 = 3.01 X 100 = 301

6 1 ÷ 10 = 1 X 0.1 = 0.1

7 6 ÷ 100 = 6 X 0.01 = 0.06

8 0.02 ÷ 0.1 = 0.02 X 10 = 0.2

9 0.05 ÷ 0.001 = 0.05 X 1,000 = 50

10 0.005 ÷ 0.001 = 0.005 X 1,000 = 5

11 12 ÷ 1,000 = 12 X 0.001 = 0.012

12 32 ÷ 0.001 = 32 X 1,000 = 32,000

4 Match:

1	18 X 0.1	a	18 ÷ 1,000
2	18 X 0.01	b	18 ÷ 10
3	18 X 0.001	c	18 ÷ 100
4	18 X 10	d	18 ÷ 0.01
5	18 X 100	e	18 ÷ 0.1

(Matches drawn: 1 – b, 2 – c, 3 – a, 4 – e, 5 – d)

5 Compare using (<, = or >):

1. 2.5 X 10 **<** 25 ÷ 0.01
2. 0.1 X 100 **>** 10 ÷ 100
3. 30 X 100 **=** 3 ÷ 0.001
4. 125 ÷ 10 **<** 12.5 X 10
5. 15 X 0.01 **=** 1.5 ÷ 10
6. 721 X 0.1 **=** 721 ÷ 10
7. 18.8 ÷ 10 **<** 188 ÷ 0.1
8. 225 X 0.1 **>** 0.225 ÷ 0.1
9. 20.02 ÷ 10 **>** 2.2 ÷ 10
10. 20 X 0.5 **=** 1 ÷ 0.1

6 Complete each conversion. Then, write a multiplication equation and a division equation with the same answer:

1 65 kg = 65,000 g 65 X 1,000 = 65,000 65 ÷ 0.001 = 65,000	2 2.5 m = 250 cm 2.5 X 100 = 250 2.5 ÷ 0.01 = 250
3 5 liters = 5,000 mL 5 X 1,000 = 5,000 5 ÷ 0.001 = 5,000	4 923 meters = 0.923 km 923 X 0.001 = 0.923 923 ÷ 1,000 = 0.923
5 23 km = 23,000 m 23 X 1,000 = 23,000 23 ÷ 0.001 = 23,000	6 25 mm = 2.5 cm 25 X 0.1 = 2.5 25 ÷ 10 = 2.5
7 225 mL = 0.225 liter 225 X 0.001 = 0.225 225 ÷ 1,000 = 0.225	8 200 gm = 0.2 kg 200 X 0.001 = 0.2 200 ÷ 1,000 = 0.2
9 2.5 cm = 25 mm 2.5 X 10 = 25 2.5 ÷ 0.1 = 25	10 42 dm = 420 cm 42 X 10 = 420 42 ÷ 0.1 = 420

Assessment 5 on Lessons 10&11

Unit 5

First: Complete the following:

1. 45 X 0.01 = 0.45
2. 25 ÷ 1,000 = 0.025
3. 12.5 X 100 = 1,250
4. 5.74 ÷ 0.1 = 57.4
5. 0.56 X 10 = 5.6
6. 20 ÷ 100 = 0.2
7. 7.8 X 0.1 = 0.78
8. 85.9 ÷ 0.01 = 8,590
9. 78.5 X 0.1 = 785 ÷ 100
10. 5.6 X 1,000 = 56 ÷ 0.01

Second: Complete each conversion. Then, write a multiplication equation and a division equation with the same answer:

1. 137 cm = 1.37 m
   137 X 0.01 = 1.37
   137 ÷ 100 = 1.37

2. 86 kg = 86,000 g
   86 X 1,000 = 86,000
   86 ÷ 0.001 = 86,000

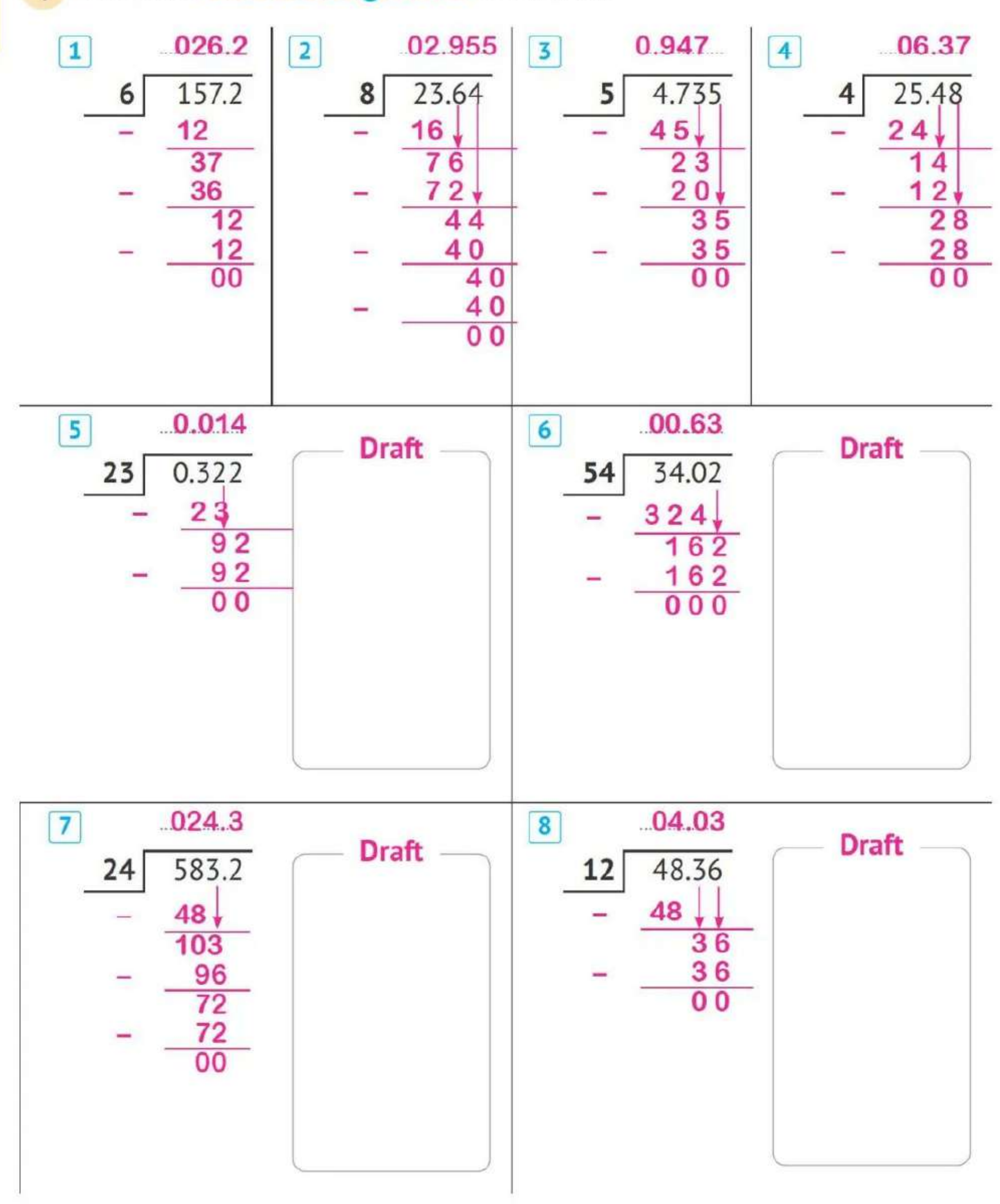
3. 8,102 mL = 8.102 L
   8,102 X 0.001 = 8.102
   8,102 ÷ 1,000 = 8.102

Third: Compare using (<, = or >):

1. 856 ÷ 100 = 856 X 0.01
2. 5.64 X 100 < 5.64 ÷ 0.001
3. 200 ÷ 1,000 < 200 X 0.01
4. 12 X 0.01 < 12 ÷ 0.01

Lessons 12&13 Dividing Decimals by Whole Numbers / Dividing Decimals by Decimals

1 Use the **standard algorithm** to divide:



2 Use the **standard algorithm** to divide:

1. $2.8 \div 8 = 0.35$
   - 8) 2.8
   - − 24 → 40
   - − 40 → 00

2. $5.23 \div 2 = 2.615$
   - 2) 5.23
   - − 4 → 12
   - − 12 → 3
   - − 2 → 10
   - − 10 → 00

3. $3.22 \div 4 = 0.805$
   - 4) 3.22
   - − 32 → 0020
   - − 20 → 00

4. $25.2 \div 5 = 05.04$
   - 5) 25.2
   - − 25 → 20
   - − 20 → 00

5. $25 \div 4 = 06.25$
   - 4) 25
   - − 24 → 10
   - − 8 → 20
   - − 20 → 00

6. $33 \div 6 = 05.5$
   - 6) 33
   - − 30 → 30
   - − 30 → 00

7. $28.5 \div 25 = 01.14$
   - 25) 28.5
   - − 25 → 35
   - − 25 → 100
   - − 100 → 000

Draft

8. $37.8 \div 15 = 02.52$
   - 15) 37.8
   - − 30 → 78
   - − 75 → 30
   - − 30 → 00

Draft

9. $24 \div 16 = 01.5$
   - 16) 24
   - − 16 → 80
   - − 80 → 00

Draft

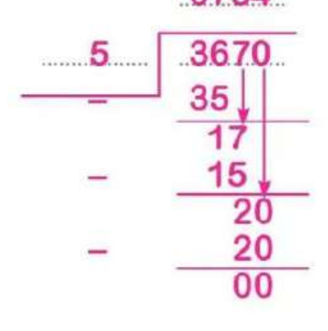
3 Use the **standard algorithm** to divide:

1 45.24 ÷ 0.4 = 113.1

113.1

4) 452.4
− 4
05
− 4
12
− 12
004
− 4
0

2 36.7 ÷ 0.05 = 734

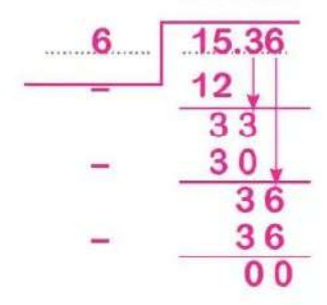


3 1.242 ÷ 0.006 = 207

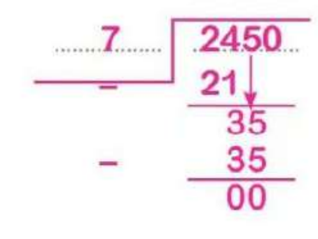
0207

6) 1242
− 12
0042
− 42
00

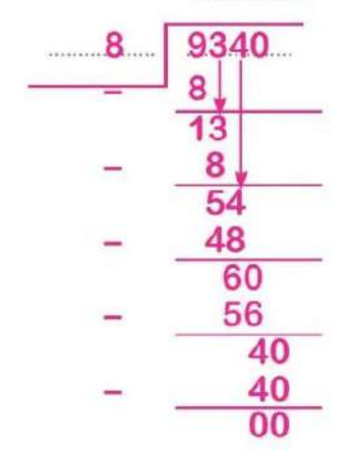
4 1.536 ÷ 0.6 = 2.56



5 245 ÷ 0.7 = 350



6 934 ÷ 0.8 = 1,167.5

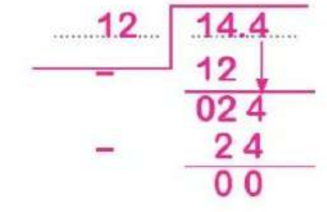


7 65.65 ÷ 0.13 = 505

0505

13) 6565
− 65
0065
− 65
00

8 1.44 ÷ 1.2 = 1.2



9 45.6 ÷ 0.15 = 304

0304

15) 4560
− 45
0060
− 60
00

10 24.7 ÷ 2.5 = 9.88 .

```
        09.88
  25 | 247
    -  225
        220
   -    200
        200
   -    200
        000
```

11 14.297 ÷ 1.7 = 8.41 .

```
        08.41
  17 | 142.97
    -  136
         69
   -     68
         17
   -     17
         00
```

12 30.8 ÷ 2.8 = 11 .

```
        011
  28 | 308
    -  28
        28
   -    28
        00
```

4 If $53 \times 31 = 1{,}643$, then:

1	16.43 ÷ 31 = 0.53	2	1.643 ÷ 0.53 = 3.1
3	1,643 ÷ 3.1 = 530	4	164.3 ÷ 0.53 = 310
5	164.3 ÷ 3.1 = 53	6	16.43 ÷ 5.3 = 3.1
7	1.643 ÷ 0.31 = 5.3	8	1643 ÷ 5.3 = 310
9	3.1 X 5.3 = 16.43	10	31 X 0.53 = 16.43
11	31 X 5.3 = 164.3	12	0.31 X 5.3 = 1.643
13	3.1 X 53 = 164.3	14	3.1 X 0.53 = 1.643
15	0.31 X 53 = 16.43	16	31 X 53 = 1,643

5 Compare using (<, = or >):

1	2.5 ÷ 0.5 = 25 ÷ 5	2	0.45 ÷ 9 < 45 ÷ 0.9
3	30 ÷ 1.5 > 3 ÷ 15	4	3.6 ÷ 1.2 = 0.36 ÷ 0.12
5	48 ÷ 0.8 > 4.8 ÷ 8	6	6.3 ÷ 0.9 < 63 ÷ 0.9
7	1.44 ÷ 12 < 14.4 ÷ 0.12	8	225 ÷ 25 > 0.225 ÷ 0.25
9	2.7 ÷ 9 > 0.27 ÷ 9	10	5 ÷ 0.8 = 50 ÷ 8

6 Answer the following:

1. Rashida saved 350 pounds to buy a toy car. She was saving 12.5 pounds for every day she did some simple work. How many days did she have to work to save enough cash to buy the toy?

$350 \div 12.5 = 28$ days

2. A father divided 99 pounds equally among his five children. How many pounds does each son take?

$99 \div 5 = 19.8$ pounds

3. Mona bought 9 meters of fabric, and paid 214.2 pounds. What is the price of one meter of fabric?

$214.2 \div 9 = 23.8$ pounds

4. If the profits of a shop are 728 pounds, and these profits are to be distributed equally among 5 persons, what is the share of one person?

$728 \div 5 = 145.6$ pounds

5. A car consumed 210 liters of gasoline in 4 months. What is the average amount of gasoline that the car consumed in one month?

$210 \div 4 = 52.5$ L

6. Bilal buys 6 bags of fruits, each bag contains 4.25 kg. He wants to give some fruits to two of his friends. What is the weight of the fruits that each friend takes?

$(6 \times 4.25) \div 2 = 12.75$ kg

7. Maha walked 3,000 meters every day for two weeks, the following week she walked 14 kilometers.

How many kilometers did she walk during those three weeks?

$3{,}000 \times 14 = 42{,}000$ m $= 42$ km

$42 + 14 = 56$ km

8. Sarah bought 20 kilograms of sugar. If she uses 4.5 kilograms to make the drinks and distributes the rest among 5 bags equally, how many kilograms of sugar are in each bag?

$(20 - 4.5) \div 5 = 3.1$ kg

Assessment on Lessons 12&13

Unit 5

First: Use the **standard algorithm** to divide:

1) $17.4 \div 0.6 =$ 29 .

$$\begin{array}{r|l} 6 & 174 \\ - & 12 \\ & 54 \\ - & 54 \\ & 00 \end{array}$$

Quotient: 29

2) $93.1 \div 0.7 =$ 133 .

$$\begin{array}{r|l} 7 & 931 \\ - & 7 \\ & 23 \\ - & 21 \\ & 21 \\ - & 21 \\ & 00 \end{array}$$

Quotient: 133

3) $8 \div 0.32 =$ 25 .

$$\begin{array}{r|l} 32 & 800 \\ - & 64 \\ & 160 \\ - & 160 \\ & 000 \end{array}$$

Quotient: 25

Second: If **434 X 12 = 5,208**, then:

1) $520.8 \div 0.12 =$ 4,340 .
2) $52.08 \div 0.12 =$ 434 .
3) $5.208 \div 0.12 =$ 43.4 .
4) $5,208 \div 0.12 =$ 43,400 .
5) $52.08 \div 12 =$ 4.34 .
6) $520.8 \div 43.4 =$ 12 .
7) $52.08 \div 43.4 =$ 1.2 .
8) $5.208 \div 0.434 =$ 12 .
9) $5,208 \div 43.4 =$ 120 .
10) $5.208 \div 434 =$ 0.012 .

Third: Match:

1) $12.25 \div 2.5$	a) $12.25 \div 0.25$
2) $122.5 \div 2.5$	b) $1.225 \div 0.25$
3) $1.225 \div 2.5$	c) $1,225 \div 0.25$
4) $1,225 \div 2.5$	d) $12.25 \div 25$
5) $12,250 \div 2.5$	e) $12,250 \div 25$

(Matched: 1 – b, 2 – a, 3 – d, 4 – e, 5 – c)

Assessment on Concept 2



First: **Choose the correct answer:**

1. ..0.045.. liter = 45 milliliters
   - ⓐ 0.045 ⓑ 45,000 ⓒ 0.45 ⓓ 4.500
2. 3 Tenths ÷ 5 Hundredths = ...6......
   - ⓐ 15 ⓑ 6 ⓒ 0.015 ⓓ 0.06
3. 24.7 ÷ ...100.... = 0.247
   - ⓐ 0.01 ⓑ 0.1 ⓒ 10 ⓓ 100
4. 9.6 ÷ 0.1 = 9.6 X 10
   - ⓐ 9.6 X 0.1 ⓑ 96 X 0.1 ⓒ 96 X 10 ⓓ 9.6 X 10
5. 0.001 X ....25.... = 0.25 ÷ 10
   - ⓐ 0.25 ⓑ 2.5 ⓒ 25 ⓓ 250

Second: **Complete the following:**

1. 75.03 ÷ ....0.1.... = 750.3
2. 18,000 ÷ 100 = ...180....
3. 18 X 0.01 = 18 ÷ ....100....
4. 45.36 cm = ..453.6.. mm.
5. If 2.5 X 1.2 = 3, then 3 ÷ 25 = ..0.12....

Third: **Match:**

1. 25 X 0.1	ⓐ 2.5 ÷ 10
2. 2.5 X 0.1	ⓑ 2.5 ÷ 0.1
3. 2.5 X 0.01	ⓒ 0.25 ÷ 0.1
4. 2.5 X 10	ⓓ 0.25 ÷ 10

(Matched: 1 → ⓒ, 2 → ⓐ, 3 → ⓓ, 4 → ⓑ)

Fourth: **Answer the following:**

A factory for the manufacture of pasta produces **832.5** kg of pasta daily, which are packed in bags of **450** grams per bag. Find the number of bags needed for this.

..........Number of bags = 832.5 ÷ 0.45 = 1,850 bags..........

....

Unit 6 Numerical Expressions and Patterns

Concept 6.1 Evaluating Numerical Expressions and Patterns

Lesson 1-4

Order of Mathematical Operations
Numerical Expressions with Parentheses
Writing Expressions to Represent Scenarios
Identifying Numerical Patterns

1 Use the order of operations to evaluate each expression, one step at a time:

1 $1.5 + 2.5 + 0.7$ $= 4 + 0.7$ $=$ ...... $= 4.7$	2 $9.8 - 2.6 - 1.3$ $= 7.2 - 1.3$ $=$ ...... $= 5.9$	3 $8.01 + 7 - 10.02$ $= 15.01 - 10.02$ $=$ ...... $= 4.99$
4 $24 - 5.5 + 4.3$ $= 18.5 + 4.3$ $=$ ...... $= 22.8$	5 $0.2 \times 2 \times 4.2$ $= 0.4 \times 4.2$ $=$ ...... $= 1.68$	6 $4.5 \div 3 \div 0.5$ $= 1.5 \div 0.5$ $=$ ...... $= 3$
7 $2.5 \times 8 \div 0.5$ $= 20 \div 0.5$ $=$ ...... $= 40$	8 $4.8 \div 6 \times 0.5$ $= 0.8 \times 0.5$ $=$ ...... $= 0.4$	9 $8 \times 2.5 + 10.2$ $= 20 + 10.2$ $=$ ...... $= 30.2$
10 $4.2 \times 10 - 8.2$ $= 42 - 8.2$ $=$ ...... $= 33.8$	11 $7.5 + 4 \times 2.4$ $= 7.5 + 9.6$ $=$ ...... $= 17.1$	12 $1.5 - 0.3 \times 0.3$ $= 1.5 - 0.09$ $=$ ...... $= 1.41$
13 $4 \div 0.8 + 2.5$ $= 5 + 2.5$ $=$ ...... $= 7.5$	14 $0.36 \div 0.9 - 0.4$ $= 0.4 - 0.4$ $=$ ...... $= 0$	15 $4.2 + 1.6 \div 2$ $= 4.2 + 0.8$ $=$ ...... $= 5$

2 Use the order of operations to evaluate each expression, one step at a time:

1 $8.5 + 5.3 + 7.7 + 3.5$ $= 13.8 + 7.7 + 3.5$ $= 21.5 + 3.5$ $= 25$	2 $25 - 8.5 - 3.2 - 6$ $= 16.5 - 3.2 - 6$ $= 13.3 - 6$ $= 7.3$
3 $2.5 \times 10 \times 0.3 \times 0.1$ $= 25 \times 0.3 \times 0.1$ $= 7.5 \times 0.1$ $= 0.75$	4 $0.36 \div 0.01 \div 0.6 \div 0.3$ $= 36 \div 0.6 \div 0.3$ $= 60 \div 0.3$ $= 200$
5 $72 \times 0.1 + 0.5 \times 10$ $= 7.2 + 5$ $=$ $= 12.2$	6 $4.5 \times 100 - 50 \times 9$ $= 450 - 450$ $=$ $= 0$
7 $12 \div 0.4 + 1.5 \div 3$ $= 30 + 0.5$ $=$ $= 30.5$	8 $3.6 \div 0.9 - 0.24 \div 8$ $= 4 - 0.03$ $=$ $= 3.97$
9 $0.6 \times 8 + 7.5 \times 10 + 0.7 \times 3$ $= 4.8 + 75 + 2.1$ $= 79.8 + 2.1$ $= 81.9$	10 $7 \times 10 - 0.7 \times 50 - 0.3 \times 10$ $= 70 - 35 - 3$ $= 35 - 3$ $= 32$
11 $2.4 \div 3 + 3 \div 6 + 24 \div 0.8$ $= 0.8 + 0.5 + 30$ $= 1.3 + 2.1$ $= 31.3$	12 $4.8 \div 2 + 3.5 \div 7 - 6.4 \div 8$ $= 2.4 + 0.5 - 0.8$ $= 2.9 - 0.8$ $= 2.1$
13 $52 + 4.5 \times 10 - 7$ $= 52 + 45 - 7$ $= 97 - 7$ $= 90$	14 $45 - 14 + 2.5 \times 8$ $= 45 - 14 + 20$ $= 31 + 20$ $= 51$
15 $15 + 4 \times 0.3 - 0.2$ $= 15 + 1.2 - 0.2$ $= 16.2 - 0.2$ $= 16$	16 $8 + 0.35 \div 0.5 - 0.3 \times 4$ $= 8 + 0.7 - 1.2$ $= 8.7 - 1.2$ $= 7.5$

3 **Use the order of operations to evaluate each expression, one step at a time:**

1. 4.2 X (10 – 9.2)
= 4.2 X 0.8
=
=
= 3.36

2. (7.5 – 4) X 0.1
= 3.5 X 0.1
=
=
= 0.35

3. (4.3 + 0.7) X 0.3
= 5 X 0.3
=
=
= 1.5

4. 4 X (5.8 + 4.2)
= 4 X 10
=
=
= 40

5. 0.36 ÷ (0.9 – 0.3)
= 0.36 ÷ 0.6
=
=
= 0.6

6. (4.2 + 1.6) ÷ 2
= 5.8 ÷ 2
=
=
= 2.9

7. 2.4 ÷ (7.8 – 7.2)
= 2.4 ÷ 0.6
=
=
= 4

8. 16 ÷ (0.9 + 0.7)
= 16 ÷ 1.6
=
=
= 10

9. (5.2 – 0.4) ÷ 6
= 4.8 ÷ 6
=
=
= 0.8

4 **Use the order of operations to evaluate each expression:**

1. [0.85 X (2.7 + 7.3)] - 3.5
= [0.85 X 10] - 3.5
= 8.5 - 3.5
=
= 5

2. 25 + [0.5 X (4.2 – 3) + 1]
= 25 + [0.5 X 1.2 + 1]
= 25 + [0.6 + 1]
= 25 + 1.6
= 26.6

3. [(20.5 – 10) X 0.3] ÷ 0.1
= [10.5 X 0.3] ÷ 0.1
= 3.15 ÷ 0.1
=
= 31.5

4. [(0.36+1.2) ÷ (0.6+0.2)] X 5
= [1.56 ÷ 0.8] X 5
= 1.95 X 5
=
= 9.75

5. 12 X [(0.1 + 0.5) X 10] ÷ 8
= 12 X [0.6 X 10] ÷ 8
= 12 X 6 ÷ 8
= 72 ÷ 8
= 9

6. 54 ÷ [75 X 0.1 – (15÷10)]
= 54 ÷ [7.5 - 1.5]
= 54 ÷ 6
=
= 9

Theme 2

5 Match:

1. 4.8 ÷ 0.2 X 0.4 + 1.2
2. 4.8 ÷ 0.2 X (0.4 + 1.2)
3. 4.8 ÷ (0.2 X 0.4) + 1.2
4. 4.8 ÷ [(0.2 X 0.4) + 1.2]



6 For each problem, write an expression that matches the clues. Then, evaluate the expression:

1. Add 5.9 and 12.6 Then multiply the result by 10

(5.9 + 12.6) X 10
= 18.5 X 10
= 185

2. Add 5.25 and 3.1 Then divide the result by 0.1

(5.25 + 3.1) ÷ 0.1
= 8.35 ÷ 0.1
= 83.5

3. Multiply 0.542 by 100 and add 2.5

0.542 X 100 + 2.5
= 54.2 + 2.5
= 56.7

4. Divide 456 by 10 and add 4.4

456 ÷ 10 + 4.4
= 45.6 + 4.4
= 50

5. Divide 93 by 0.3 Then add 114.7 and divide the result by 5

(93 ÷ 0.3 + 114.7) ÷ 5
= (310 + 114.7) ÷ 5
= 424.7 ÷ 5 = 84.94

6. Add 30.5, 5.5, and 4 Then subtract the result from 125.5 and finally multiply by 100

[125.5 – (30.5 + 5.5 + 4)] X 10
= [125.5 – 40] X 100
= 8,550

7. Multiply 7.6 by 100 Next subtract 34.3 Then add 12.4 Finally divide the result by 0.1

(7.6 X 100 – 34.3 + 12.4) ÷ 0.1
= 738.1 ÷ 0.1
=7,381

8. Divide 4.5 by 0.1 Then add 5.5. Multiplied by 10

4.5 ÷ 0.1 + 5.5 X 10
= 45 + 5.5 X 10
= 45 + 55
= 100

7 Answer the following:

1 Adel bought **16.5** kg of apples. He gave **1.5** kg of them to his family and wants to give the rest to **5** of his friends. How many kilograms would each friend get if he divided it equally among them?

$(16.5 - 1.5) \div 5 = 3$ kg

2 Maha walked **2.5** kilometers every day for two weeks. The following week, she walked **54.2** km. How many kilometers did she walk during those three weeks?

$2.5 \times 14 + 54.2 = 35 + 54.2 = 89.2$ km

3 Bilal bought **6** bags of balloons. Each bag contains **12** balloons. He wants to give balloons to his friends at his birthday party. If he has **8** friends at the party, how many balloons will each friend take?

$6 \times 12 \div 8 = 9$ balloons

8 Write the rule for each pattern with a variable. Then, complete the pattern by finding the missing values:

1 2, 5, 8, 11, 14, 17, 20, 23, 26 Rule: $n + 3$

2 3, 8, 13, 18, 23, 28, 33, 38, 43 Rule: $n + 5$

3 58, 54, 50, 46, 42, 38, 34, 30, 26 Rule: $n - 4$

4 90, 80, 70, 60, 50, 40, 30, 20 Rule: $n - 10$

5 1, 2, 4, 8, 16, 32, 64, 128, 256 Rule: $n \times 2$

6 1, 3, 9, 27, 81, 243, 729, 2,187 Rule: $n \times 3$

7 256, 128, 64, 32, 16, 8, 4 Rule: $n \div 2$

9 Write the **rule** for each pattern with a **variable**. Then, complete the pattern by finding the missing values:

1

Input	Output
15	8
17	10
21	14
25	18
27	20
Rule: n – 7	

2

Input	Output
18	10
28	20
38	30
48	40
58	50
Rule: n – 8	

3

Input	Output
5	8
7	10
9	12
11	14
13	16
Rule: n + 3	

4

Input	Output
1	6
2	7
3	8
4	9
5	10
Rule: n + 5	

5

Input	Output
39	13
33	11
27	9
21	7
15	5
Rule: n ÷ 3	

6

Input	Output
3	9
6	18
9	27
12	36
15	45
Rule: n X 3	

7

Input	Output
6	3
10	5
14	7
18	9
22	11
Rule: n ÷ 2	

8

Input	Output
2	6
4	12
6	18
8	24
10	30
Rule: n X 3	

10 Use the **rule** shown and complete the table:

1

Input	Output
15	3
25	5
35	7
45	9
55	11
Rule: n ÷ 5	

2

Input	Output
3	9
9	27
15	45
24	72
27	81
Rule: n X 3	

3

Input	Output
16	12
20	16
24	20
28	24
32	28
Rule: n – 4	

4

Input	Output
1	8
2	9
3	10
4	11
5	12
Rule: n + 7	

Assessment on Concept 1



First: **Choose the correct answer:**

1. 4.5 + 35 X 0.1 = ...8....
   - ⓐ 8 ✓
   - ⓑ 3.95
   - ⓒ 0.8
   - ⓓ 39.5

2. 1.2 X (0.3 + 0.2) = ...0.6....
   - ⓐ 0.56
   - ⓑ 0.6 ✓
   - ⓒ 6
   - ⓓ 5.6

3. The mathematical expression that expresses "Add 3.5 and 3.7 Then multiply by 0.8" is (3.5 + 3.7) X 0.8
   - ⓐ 3.5 + 3.7 X 0.8
   - ⓑ (3.5 + 3.7) X 0.8 ✓
   - ⓒ 3.5 + (3.7 X 0.8)
   - ⓓ 3.5 X 3.7 + 0.8

4. The mathematical expression " 4.5 – 0.3 ÷ 1.2 " is expressed as: ....
   - ⓐ subtract 0.3 from 4.5 Then divide by 1.2
   - ⓑ divide 0.3 by 1.2 Then subtract 4.5
   - ⓒ subtract 4.5 from 0.3 Then divide by 1.2
   - ⓓ divide 0.3 by 1.2. Then subtract the result from 4.5 ✓

5. 5.6 + 0.5 – 0.4 X 1.5 = 5.6 + 0.5 – 0.6
   - ⓐ 6.1 – 0.6
   - ⓑ 5.6 + 0.1X 1.5
   - ⓒ 5.6 + 0.5 – 0.6 ✓
   - ⓓ 6.1 – 0.4 X 1.5

6. The rule of the following pattern is

Input	Output
3	12
4	16
5	20

   - ⓐ n + 9
   - ⓑ n – 9
   - ⓒ n X 4 ✓
   - ⓓ n ÷ 9

7. The rule of the following pattern is

Input	Output
20	8
18	6
16	4

   - ⓐ n – 12 ✓
   - ⓑ n ÷ 3
   - ⓒ n X 4
   - ⓓ n + 12



Second: Use the order of operations to evaluate each expression:

1. $9.2 + 2.5 \times 4 \div 5$
   = $9.2 + 10 \div 5$
   = $9.2 + 2$
   =
   = 11.2

2. $5 \times [\, 4.8 \div (\, 8.4 - 7.2 \,)\,]$
   = $5 \times [4.8 \div 1.2]$
   = 5×4
   =
   = 20

3. $(\, 6.7 - 2.3 \,) \times (\, 8.5 + 2.5)$
   = 4.4×11
   =
   =
   = 48.4

Third: Answer the following:

Hoda is filling identical vases with water for flower arrangements at the florist. She starts with 15.75 liters and pours an equal amount into 16 vases. When she is finished, Hoda still has 3.75 L of water left. How much water is in each vase? Give your answer in liters. Write an expression that matches the scenario, then evaluate the expression. $(15.75 - 3.75) \div 16 = 0.75$ L .



Assessments on Units

Assessment on Unit 1



First: Choose the correct answer:

1. 45,000.04 **(In word form):** ....
   - a) Forty-five and four hundredths
   - b) Forty-five and four thousandths
   - c) Forty-five thousand and four hundredths
   - d) Forty-five thousand and four thousandths

2. Six milliard, Twenty million, 4 hundred thousand, eighty is ....
   - a) 6,020,400,080
   - b) 6,200,400,800
   - c) 6,002,004,800
   - d) 6,248

3. The value of .... is increased by a factor of 10 to 75.2.
   - a) 752
   - b) 7.52
   - c) 75.2
   - d) 0.752

4. 50 + 7 + 0.02 + 0.004 = ...
   - a) 57.024
   - b) 57.24
   - c) 57.6
   - d) 57.204

5. 47.98 ≈ .... **(To the nearest Tenth)**
   - a) 47.9
   - b) 47.0
   - c) 48.0
   - d) 48.9

6. 3.07 = ...
   - a) 30 + 7
   - b) 30 + 0.7
   - c) 3 + 0.07
   - d) 30 + 0.07

7. 85.23 ÷ 10 = ...
   - a) 8,523
   - b) 852.5
   - c) 85.25
   - d) 8.523

8. 23 + 0.9 ☐ 230 + 0.09
   - a) $>$
   - b) $<$
   - c) =
   - d) $\leqslant$

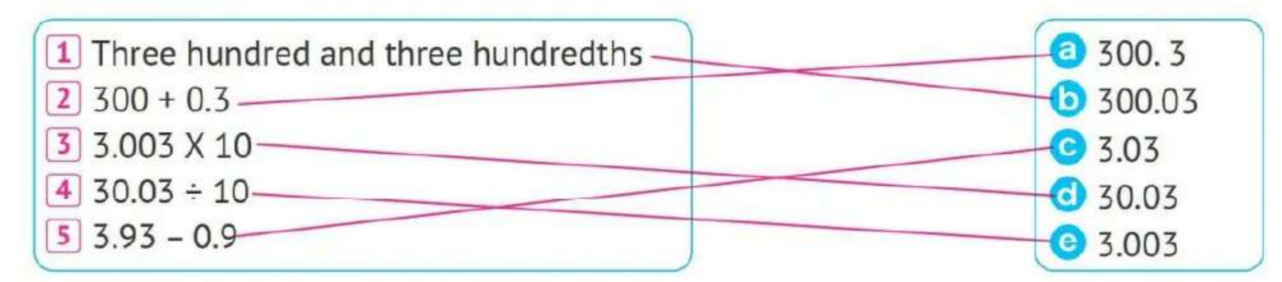
9. The expression that expresses the corresponding model is ....
   - a) 0.3 – 0.025
   - b) 0.3 + 0.25
   - c) 0.3 – 0.25
   - d) 0.03 + 0.25

10. The expression that expresses the corresponding model is ....
    - a) 2.2 + 0.32
    - b) 0.22 – 0.32
    - c) 0.22 + 0.1
    - d) 0.22 – 0.01

Second: Complete the following:

1. Sixty-five million and five thousandths **(In standard form)**: 65,000,000.005 .
2. In 8,567.491, the place value of 9 is Hundredths and its value is 0.09 .
3. The value of 56.47 is decreased by a factor of 10 to 5.647 .
4. 43.78 ≈ 43.8 **(To the nearest Tenth)**
5. 400 + 20 + 0.1 + 0.008 = 420.108
6. 45.95 X 10 = 459.5
7. 6 Hundredths + 6 Thousandths = 66 Thousandths
8. The estimated difference of (7.12 – 2.9) using rounding to the nearest whole number strategy is 4 .
9. 0.38 + 0.62 = 1
10. 1 – 0.12 = 0.88

Third: Match:



Fourth: Compare using (<, = or >):

1. 35.001 < 35.100
2. 75.012 < 75.102
3. 100 + 2 + 0.05 > 100.25
4. 45.6 X 10 > 45 ÷ 10
5. 80.002 < Eight hundred and two hundredths

Fifth: Answer the following:

1. A farmer can raise 25,327 liters of water on one day using the shadouf and 47,128 liters on another day. How many liters can the farmer raise in two days?

   25,327 + 47,128 = 72,455 liters .

2. Walaa is traveling from Cairo to Matrouh. If the distance between Cairo and Matrouh is 446.3 kilometers, and Walaa traveled 267.53 kilometers, then what is the distance that Walaa has to travel to reach Matrouh?

   446.3 – 267.53 = 178.77 km .

3. Omar has 67.40 pounds, and his sister Fairouz has 70.45 pounds. They want to buy a game for 342.5 pounds. How much do they need to buy this game?

   70.45 + 67.40 = 137.85 pounds 342.5 – 137.85 = 204.65 pounds .

Assessment on Unit 2



First: **Choose the correct answer:**

1. $7.5 + 5.25 = \mathbf{m} - 2.35$ is ....
   - (a) a variable
   - (b) a mathematical expression
   - (c) an equation ✓
   - (d) other

2. In the equation $6.45 + \mathbf{x} = 9.15$, if 9.15 represents the sum of two numbers and 6.45 represents one of the two numbers, then **x** represents ....
   - (a) the other number ✓
   - (b) the sum of the two numbers
   - (c) the difference between the two numbers
   - (d) other

3. If $12.4 + \mathbf{x} = 26.3 - 10.04$, then $\mathbf{x} =$ ....
   - (a) $12.4 + 26.3 + 10.04$
   - (b) $(26.3 - 10.04) - 12.4$ ✓
   - (c) $13.26 + 12.4$
   - (d) $(26.3 - 10.04) + 12.4$

4. The equation that expresses the corresponding **bar model** is ....
   - (a) $y = 2.63 + 1.2$
   - (b) $y = 2.63 - 1.2$ ✓
   - (c) $y - 1.2 = 2.63$
   - (d) $y + 2.63 = 3.83$

2.63	
y	1.2

5. "Ahmed has 5 pens and 3 books" is ....
   - (a) a variable
   - (b) a mathematical expression
   - (c) an equation
   - (d) other ✓

6. If the factors of a number are **1, 2, 4, 8,** then its prime factors are ....
   - (a) 2 X 2 X 2 ✓
   - (b) 2 X 4
   - (c) 1 X 8
   - (d) 1 X 2 X 4

7. The **LCM** of any **two** prime numbers is ....
   - (a) the largest number
   - (b) the smallest number
   - (c) 0
   - (d) their product ✓

8. **18** is a multiple of ....
   - (a) 8
   - (b) 36
   - (c) 9 ✓
   - (d) 12

9. The LCM for **6** and **4** is ....
   - (a) 12 ✓
   - (b) 24
   - (c) 36
   - (d) 48

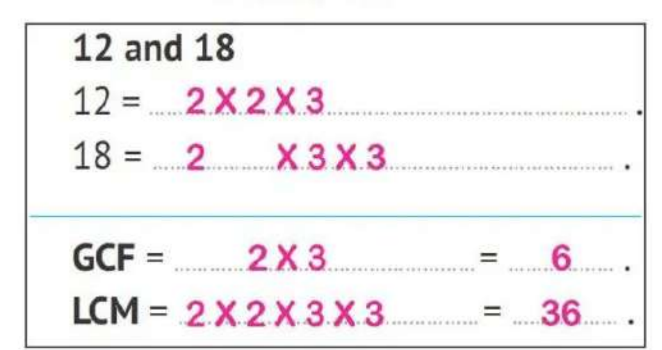
10. **30** is a common multiple of the **two** numbers ....
    - (a) 10, 8
    - (b) 6, 12
    - (c) 30, 9
    - (d) 10, 15 ✓

Second: Complete the following:

1. If $8.235 + \mathbf{p} = 10.224$, then $\mathbf{p}$ = ...1.989........ .
2. All prime numbers are ...odd... numbers, except ......2...... which is an even number.
3. If $\mathbf{x} = 3.51$, then $\mathbf{x} - 1.28$ = ...2.23........ .
4. If $\mathbf{t} \times 8 = 56$, then $\mathbf{t}$ = ...7.......... .
5. The equation that represents [4.02 plus "**a**" equals 12] is $4.02 + a = 12$
6. The factors of **25** are ...1 , 5 , 25... .
7. The prime factors of **25** are ......5 X 5...... .
8. A number whose prime factors are **2, 3, 5** is ....30.......... .
9. ....0.......... is a common multiple to all numbers.
10. Use the equation "$\mathbf{s} - 0.12 = 7.25$" to complete the corresponding bar model.



Third: Complete the factor tree, then find the GCF and LCM for 12 and 18.



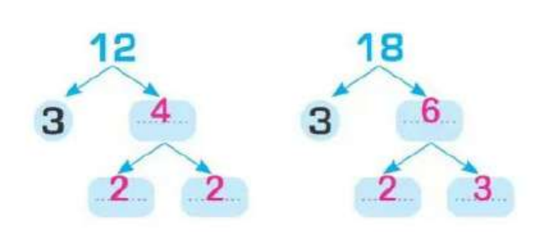
12 and 18

12 = 2 X 2 X 3

18 = 2 X 3 X 3

GCF = 2 X 3 = 6 .

LCM = 2 X 2 X 3 X 3 = 36 .



Fourth: Answer the following:

Mary has **25** blue roses and **15** red roses that she wants to distribute in bouquets, so that each bouquet contains the same number of roses of each color.

What is the largest number of bouquets that Mary needs for each type of rose?

GCF = 5 groups

5 bouquets

5 blue roses and 3 red roses

Accumulative Assessments on Units 1&2

Assessment 1

First: Complete the following:

1. The place value of the digit 5 in 6,230.257 is **Hundredths**.
2. The number 15.892 rounded to the nearest **Hundredth** is ...... 15.89 ....
3. The prime factors of 18 are ...... 2 , 3 , 3 ....
4. ...... 0 ...... is a common multiple of all numbers.

Second: Choose the correct answer:

1. The value of .... increases when multiplying by 10 to 4.25
   - a) 425
   - b) 42.5
   - c) 4.25
   - **d) 0.425** ✓
2. 4.06 = ...
   - a) 4 + 6
   - b) 40 + 0.6
   - **c) 4 + 0.06** ✓
   - d) 10 + 0.06
3. The smallest prime number is ....
   - a) 0
   - b) 1
   - **c) 2** ✓
   - d) 3
4. The GCF for 8 and 12 is ....
   - a) 8
   - b) 12
   - c) 24
   - **d) 4** ✓

Third: Compare using (<, = or >):

1. 45.6 X 10 (>) 4.56 ÷ 10
2. 7.25 – 3.8 (<) 3.8 + 0.35
3. 78,258.023 (<) 78,258.203
4. 20 + 7 + 0.08 (<) 27 + 0.8

Fourth: Answer the following:

1. Fares traveled from Cairo to Alexandria via the agricultural road and stopped for a rest in the cities of Tanta and Damanhur. The distance between Cairo and Alexandria is 225 km. The distance between Cairo and Tanta is 100.3, and the distance between Tanta and Damanhur is 64.7 km. Calculate the distance between Alexandria and Damanhur.

   100.3 + 64.7 = 165 km ...... 225 – 165 = 60 km

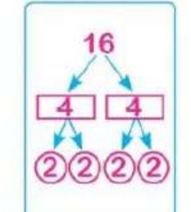
2. Find the **GCF** and **LCM** for 24 and 16. Use prime factorization.

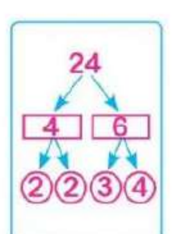
   16 = 2 X 2 X 2 X 2

   24 = 2 X 2 X 2 X 2

   GCF = 2 X 2 X 2 = 8

   LCM = 2 X 2 X 2 X 2 X 3 X 3= 48





Assessment 2

First: Complete the following:

1 All prime numbers are odd numbers, except ......2...... which is an even number.

2 The prime numbers between 20 and 30 are ......23...... and ......29...... .

3 300 + 50 + 0.2 + 0.008 = ...350.208...... .

4 Five milliard, thirty thousand, and ninety-nine thousandths (**In standard form**):

5,000,030,000.099

Second: Choose the correct answer:

1 The equation that represents [3.5 plus "m" equals 8.7] is ....

(a) m − 3.5 = 8.7 (b) m − 8.7 = 3.5 (c) 3.5 + m = 8.7 (d) 3.5 − m = 8.7

2 The value of 78.25 is decreased when dividing by 10 to ....

(a) 7,825 (b) 782.5 (c) 7.825 (d) 0.7825

3 502 + 0.2 + 0.005 ( ) 50 + 2 + 0.25

(a) > (b) = (c) < (d) ≤

Third: Put (✓) for the correct statement and (✗) for the wrong statement:

1 8 is a common multiple of 16 and 24. (✗)

2 "4.5 + 2.3 + y = 15" is called an equation. (✓)

3 300 + 50 + 0.2 + 0.003 = 350.203 (✓)

Fourth Answer the following:

A class has 16 girls and 12 boys. The teacher wants to divide them into equal groups with the same number of boys and girls. What is the largest number of groups that can be formed? How many boys are in each group? And how many girls are in each group?

......GCF = 4 groups...... 4 girls and 3 boys......

Assessment on Unit 3



First: **Choose the correct answer:**

1. 3 X 1,000 ( ) 50 X 60
   - a) > **b) =** c) < d) ≤

2. 5,062 X 7 ( ) 5,602 X 7
   - a) > b) = **c) <** d) ≤

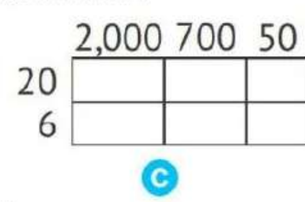
3. The model that represents 2,075 X 26 is ....

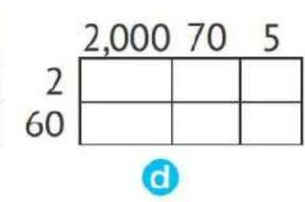
a)

	2,000	70	5
20			
6			

b)

	2,000	700	5
20			
6			

c)


d)


4. The model that represents 3,502 X 31 is ....

a)

9,000	1,500	6
3,000	500	2

b)


30,000	5,000	20
9,000	1,500	6

c)

90,000	15,000	60
3,000	500	2

d)

9,000	1,500	60
300	50	2

5. (2 X 50) + (2 X 7) + (60 X 50) + (60 X 7) = ...
   - a) 26 X 57 **b) 62 X 57** c) 62 X 75 d) 26 X 75

6. 45 X 123 = ...
   - **a) (5 X 100) + (5 X 20) + (5 X 3) + (40 X 100) + (40 X 20) + (40 X 3)**
   - b) (5 X 100) + (5 X 20) + (5 X 3) + (4 X 100) + (4 X 20) + (4 X 3)
   - c) (50 X 100) + (50 X 20) + (50 X 3) + (40 X 100) + (40 X 20) + (40 X 3)
   - d) (50 X 100) + (50 X 20) + (50 X 3) + (4 X 100) + (4 X 20) + (4 X 3)

7. The model that represents (90 X 30) + (90 X 4) + (3 X 30) + (3 X 4) is ....

a)

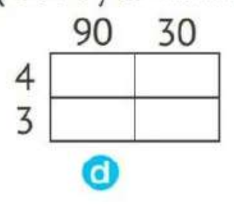
	4	3
30		
90		

b)

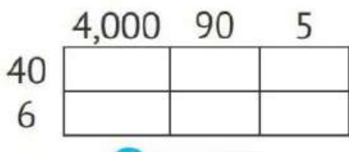
	90	3
30		
4		

c)

	90	4
30		
3		

d)


8. The problem that represents the opposite area model is ....
   - a) 4,275 X 46 b) 495 X 46
   - **c) 4,095 X 46** d) 4,905 X 46



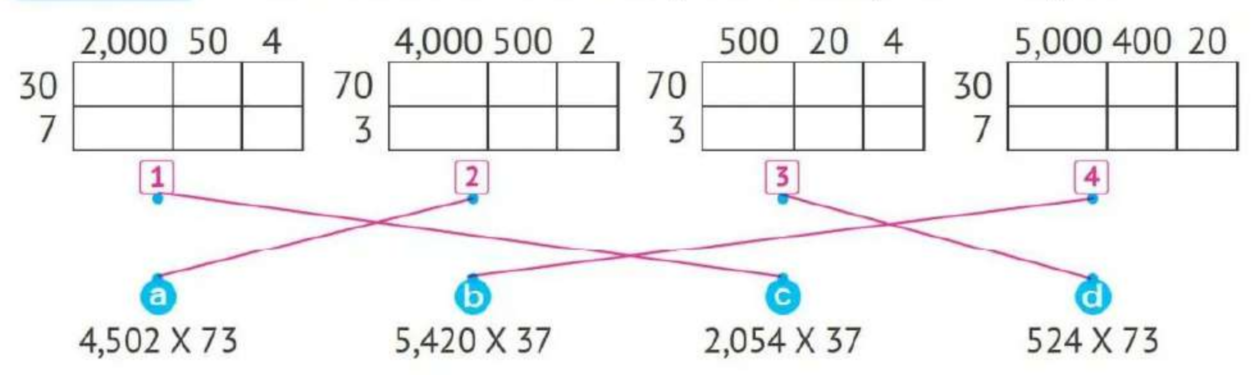
9. .... X 7 = 7,000
   - a) 10 b) 100 **c) 1,000** d) 10,000

10. 12 X .... = 12 X (200 + 30 + 30)
   - **a) 12 X 260** b) 12 X 2,330 c) 12 X 800 d) 12 X 2,033

Second: Complete the following:

1. 9 X 100,000 = **900,000**
2. 5 X **10,000** = 50,000
3. 10,000 X **7** = 70,000
4. 42 X **100** = 60 X 70
5. 7 X 123 = (7 X 100) + (7 X **20**) + (7 X **3**)
6. 8 X **3,504** = (8 X 3,000) + (8 X 500) + (8 X 4)
7. (5 X 30) + (5 X 8) + (60 X 30) + (60 X 8) = **65** X **38**
8. 45 X 22 = **990**
9. 5,020 X 12 **60,240**
10. 232 X 13 = **3,016**

Third: Match each model to the problem representing it:



4,502 X 73 5,420 X 37 2,054 X 37 524 X 73

Fourth: Solve each problem using the mentioned strategy:

1. 7,086 X 54 (Distributive Property) **382,644**
2. 6,021 X 24 (Partial Products) **144,504**
3. 6,008 X 67 (Area Model) **402,536**

Fifth: Answer the following:

Mona is making tahini to use in dishes at her restaurant. Her recipe uses 140 grams of sesame seeds to make 120 milliliters of tahini. She makes the recipe 20 times each week. How many grams of sesame seeds does she use each week?

20 X 140 = 2,800 g

How many milliliters of tahini does she make each week?

20 X 120 = 2,400 mL

How many liters of tahini does she make in 35 weeks?

2,400 X 35 = 84,000 mL = 84 L

Accumulative Assessments on Units 1- 3

Assessment 1

First: Complete the following:

1. 4 Tenths – 25 Thousandths = 0.4 – 0.025 = 0.375
2. If 2.5 + 12 = **b** + 7.5, then **b** = 7
3. 45 X 12 = (40 X 10) + (40 X 2) + (5 X 10) + (5 X 2)

Second: Choose the correct answer:

1. The multiplication problem that represents the opposite model is ....

	8	8
20		
1		

(a) 21 X 88 (b) 30 X 88 **(c) 21 X 16** (d) 30 X 16

2. .... ≈ 12.08 (To the nearest two decimal places)

(a) 12.084 (b) 12.086 (c) 12.073 (d) 12.069

3. 6 is a factor of ....

(a) 2 (b) 3 **(c) 12** (d) 8

Third: Find the result using the mentioned strategy:

1. 706 x 24 (Standard Algorithm) — 16,944
2. 621 x 16 (Partial Products) — 9,936
3. 6,008 x 32 (Area Model) — 192,256

Fourth: Put (✓) for the correct statement and (✗) for the wrong statement:

1. The **LCM** for 12 and 18 is 6. (✗)
2. 8,000.08 in **word form** is eight thousand and eight hundredths. (✓)
3. 54,020 X 5 > 50,402 X 5 (✓)

Fifth: Answer the following:

A school has 25 classes, each class has 19 girls and 17 boys.

How many students are there in the school?

17 + 19 = 36 students 36 X 25 = 900 students

Assessment 2

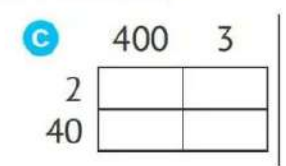
First: Choose the correct answer:

1 The least common multiple of any two prime numbers is ....

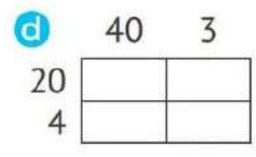
a the largest number
b the smaller number
c the product of the two numbers
d the sum of the two numbers

2 The model that represents 24 X 403 is ....

a 400 3 / 2 4



b 400 3 / 20 4



c 400 3 / 2 40

d 40 3 / 20 4

3 The value of the digit 6 in 30.067 is ....

a 60
b 6
c 0.6
d 0.06

Second: Complete the following:

1 23 X 102 = 2,346

2 The estimate of the sum of (56.3 + 4.9) using rounding to the nearest whole number strategy is 61 .

3 If b = 3.25, then 8.02 - b = 4.77 .

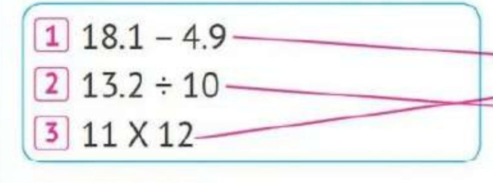
Third: Compare using (<, = or >):

1 56.02 X 3.2 = 179 + 0.264

2 45.89 ÷ 10 < 40 + 5 + 0.8 + 0.09

3 The common factor of all numbers > The common multiple of all numbers

Fourth: Match:



1 18.1 – 4.9
2 13.2 ÷ 10
3 11 X 12



a 22 X 6
b 7.8 +5.4
c 0.132 X 10

Fifth: Answer the following:

1 Wael bought 23 pens. The price of one pen is 235 piasters. How much did Wael pay?

23 X 235 = 5,405 piasters

2 Find the GCF and LCM for "3 X 6" and "4 X 3". Use prime factorization.

GCF = 6 , LCM = 36

Assessment on Unit 4



First: Choose the correct answer:

1. In 428 ÷ 2 = 214, the dividend is ....
   - a) 214
   - b) 2
   - c) 428 ✓
   - d) 824

2. Which of the following can be used to check the result of the opposite model?

	300	10	10	3
25	8,075 – 7,500 575	575 – 250 325	325 – 250 75	75 – 75 0

   - a) 3,113 X 25
   - b) 323 X 25 ✓
   - c) 3,023 X 25
   - d) 332 X 25

3. Wafaa wanted to distribute **250** candy bars equally among **12** of her colleagues, so ....
   - a) each person took 20 pieces, and 10 pieces remained ✓
   - b) each person took 10 pieces, and 20 pieces remained
   - c) each person took 21 pieces, and 2 pieces remained
   - d) each person took 21 pieces, and there is nothing left

4. 30,000 ÷ 50 = ...
   - a) 6
   - b) 60
   - c) 600 ✓
   - d) 6,000

5. .... ÷ 600 = 40
   - a) 24,000 ✓
   - b) 2,400
   - c) 240
   - d) 24

6. 40,000 ÷ .... = 800
   - a) 5
   - b) 50 ✓
   - c) 500
   - d) 5,000

7. The quotient in the following division model is ....

```
      207
92 | 19,044
   - 184
      644
   -  644
      000
```

   - a) 19,044
   - b) 92
   - c) 117
   - d) 207 ✓

8. The divisor in the following division model is ....

```
       0103
65 | 6,700
   - 6,5
      200
   -  195
        5
```

   - a) 6,700
   - b) 65 ✓
   - c) 103
   - d) 5

9 The remainder in the following division model is ....

a 6,090
b 42
c 145
d 0

	100	40	5
42	6,090	1,890	210
	− 4,200	− 1,680	− 210
	1,890	210	0

10 The dividend in the following division model is.......... .

a 8,935
b 24
c 372
d 7

```
       372
24 | 8,935
   -  72
     1,735
   - 1,68
        55
   -    48
         7
```

Second: Complete the following:

1 80 X 300 = ...**24,000**...

2 40,000 ÷ 500 = ...**80**...

3 45,060 ÷ 15 = ...**3,004**...

4 60,144 ÷ 12 = ...**5,012**...

5 72,368 ÷ 9 = 8,040 and the remainder is ...**8**... .

Third: Complete the following models:

1

```
      00314
45 | 14,130
   -  135
       63
   -   45
      180
   -  180
      000
```

2

	1,000	30	4
25	5,850	850	100
	− 5,000	− 750	− 100
	850	100	0

3

```
      0202
43 | 8,686
   -  86
      86
   -  86
       0
```

Fourth: Compare using (<, = or >):

1 45,045 ÷ 5 **=** 36,036 ÷ 4

2 45,000 ÷ 50 **>** 36,000 ÷ 400

3 1,375 ÷ 11 **=** 1,250 ÷ 10

4 36,048 ÷ 12 **>** 3,648 ÷ 12

5 65,125 ÷ 25 **<** 65,150 ÷ 25

Fifth: Answer the following:

1 Adel wants to distribute **4,530** pounds among **15** people equally. What is the share for each person?

4,530 ÷ 15 = 302 pounds

2 A school has **570** boys and **600** girls, and they are divided into **26** classes equally. How many students are there in each class?

570 + 600 = 1,170 students **1,170 ÷ 26 = 45 students**

Accumulative Assessments on Units 1- 4

Assessment 1

First: Complete the following:

1. 45.036 = 45 + 0.03 + 0.006
2. The factors of 15 are 1 , 3 , 5 , 15
3. If 12 X 213 = 2,556, then the remainder of 2,560 ÷ 12 is 4 .
4. 38 X 72 = (30 X 70) + (30 X 2) + (8 X 70) + (8 X 2)

Second: Choose the correct answer:

1. The numbers 2, 7, 11, 13 are .... numbers.
   - a. odd
   - b. even
   - c. prime ✓
   - d. composite
2. The value of 9 in the **Hundredths** place is ....
   - a. 900
   - b. 0.9
   - c. 0.09 ✓
   - d. 0.009
3. 3,600 ÷ 20 ◯ 60 X 30
   - a. < ✓
   - b. =
   - c. >
   - d. ⩽
4. The divisor in the corresponding division problem is ....
   - a. 4
   - b. 2,500
   - c. 208
   - d. 12 ✓

	200	8
	2,500	100
12	− 2,400	− 96
	100	4

Third: Find the result using the mentioned strategy:

1. 3,844 ÷ 31 (Partial Quotients Model)

   124

2. 1,545 ÷ 45 (Area Model)

   34 (R15)

Fourth: Answer the following:

1. Hana bought 24 kg of flour for 288 pounds. What is the price of one kilogram?

   288 ÷ 24 = 12 pounds

2. Emad is 1.45 meters tall, and Hajar is 1.39 meters tall. What is the difference between their heights?

   1.45 – 1.39 = 0.06 m

3. Find the **GCF** and **LCM** for 6 and 9. Use prime factorization.

   GCF = 3 , LCM = 18

Assessment 2

First: Find the result using your preferred strategy:

1. 4,836 ÷ 6 = 806
2. 4,254 X 31 = 131,874
3. 45.027 – 29.38= 15.647
4. 615.3 + 2.847 = 618.147

Second: Choose the correct answer:

1. If the value of the digit 7 is 0.7, then its place value is the ....
   a) Ones b) Tens **c) Tenths** d) Hundredths
2. When 45.82 is multiplied by 10, the value of the digit 8 changes to ....
   a) 80 **b) 8** c) 0.8 d) 0.08
3. .... is the common multiple of all numbers.
   a) 0 b) 1 c) 2 d) 3
4. The problem that represents the corresponding model is ....
   a) 16,884 ÷ 42
   b) 16,884 ÷ 420
   c) 42 ÷ 420
   d) 420 ÷ 42

```
      402
42 ⟌ 16,884
   -  8,400
      084
   -   84
       00
```

Third: Compare using (<, = or >):

1. 95.201 > 95.021
2. 13 X 125 < 13 X 521
3. 28.8 X 10 = 12 X 24
4. 3 Hundredths < 300 Thousandths

Fourth: Answer the following:

1. Hatem goes to the club for soccer training every **8** days, while his sister Walaa goes to the club for volleyball training every **6** days.
   How many days will it be until they go to the club together?
   LCM = 24 days
2. Arrange the following numbers in an ascending order:
   12.05 , 1.205 , 120.5 , 1,205 , 10.25
   1.205 , 10.25 , 12.05 , 120.5 , 1,205

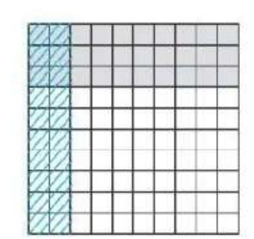
Assessment on Unit 5

First: **Choose the correct answer:**

1. .... kg = 36 g
   - a) 0.036
   - b) 36,000
   - c) 0.36
   - d) 3.600

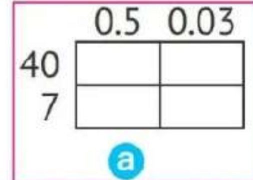
2. 0.01 X .... = 0.045
   - a) 0.45
   - b) 4.5
   - c) 45
   - d) 450

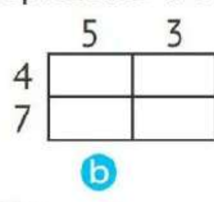
3. The multiplication problem that expresses the corresponding model is ....

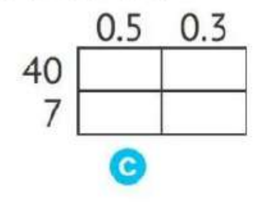


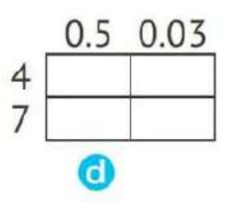
   - a) 3 X 0.2
   - b) 0.3 X 2
   - c) 0.3 X 0.2
   - d) 3 X 2

4. The area model that represents 47 X 0.53 is ....









5. 5 Tenths X 3 Hundredths = ...
   - a) 15
   - b) 1.5
   - c) 0.15
   - d) 0.015

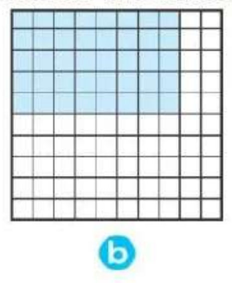
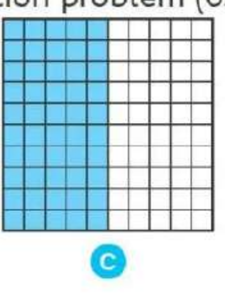
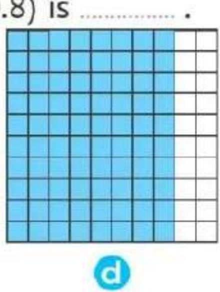
6. 25.3 ÷ .... = 0.253
   - a) 0.01
   - b) 0.1
   - c) 10
   - d) 100

7. .... ÷ 0.1 = 36.24
   - a) 362.4
   - b) 3,624
   - c) 3.624
   - d) 36,240

8. The multiplication equation that represents the corresponding model is ....
   - a) 0.24 X 0.62
   - b) 0.24 X 6.2
   - c) 2.4 X 6.2
   - d) 2.4 X 0.62

	6	0.2
0.2		
0.04		

9 The model that represents the multiplication problem (0.5 X 0.8) is ....

a b c d

10 4.5 ÷ 0.1 = ...

a 4.5 X 0.1 b 45 X 0.1 c 45 X 10 d 4.5 X 10

Second: Complete the following:

1 If 8 X 15 = 120, then 8 X 1.5 = ...12.... .

2 11.5 X 28.2 ⟶ Estimate: ....12.... X ....28.... = ...336....

(To the nearest whole number)

3 0.29 kg = ...0.29.... X 1,000 = ...290.... g.

4 The length of a rectangle is 1.2 cm and its width is 0.8 cm, then its area is ....0.96.... cm^2.

5 ....9.32.... X 100 = 932

6 29.08 ÷ ....0.1.... = 290.8

7 20.000 ÷ 0.001 = ...20,000....

8 18 X 0.01 = 18 ÷ ....100....

9 4 Tenths X 5 Hundredths = ...0.02....

10 4 Tenths ÷ 5 Hundredths = ...8....

Third: Compare using (<, = or >):

1 4.5 km = 4,500 m

2 35.5 ÷ 0.1 > 35.5 X 0.1

3 2.5 X 3.5 = 25 X 0.35

4 0.06 X 0.4 < 0.6 ÷ 0.4

Fourth: Use the standard algorithm to find:

1 4.25 X 3.7 = 15.725

```
     425
X     37
    2975
+  12750
  15.725
```

2 5.6 X 70.82 = 396.592

```
     7082
X      56
    42492
+  354100
  396.592
```

3 98 X 3.008 = 294.784

```
     3008
X      98
    24064
+  270720
  294.784
```

4 45.5 ÷ 0.5 = 91

```
     91
 5 |455
 -  45
      5
 -    5
      0
```

5 0.6 ÷ 0.12 = 5

```
     05
 12 |60
 -   60
     00
```

6 14.224 ÷ 5.6 = 2.54

```
       002.54
 56 | 142.24
 -    112
       302
 -     280
        224
 -      224
        000
```

Fifth: Answer the following:

1 Huda bought **3** notebooks, each of **4.75** pounds, and **4** pens, each of **1.25** pounds. Calculate what Huda paid.

Price of notebook = 3 X 4.75 = 14.25 pounds

Price of pens = 4 X 1.25 = 5 pounds

Huda paid = 14.25 + 5 = 19.25 pounds

2 Hiam bought **17** juice boxes; the price of each one is **2.25** pounds. How many pounds do you pay the seller?

Hiam paid = 17 X 2.25 = 38.25 pounds

And if she gives the seller **50** pounds, how does the seller return it?

The remainder = 50 – 38.25 = 11.75 pounds

3 The capacity of an oil barrel is **243.75** liters, it was filled in bottles of 0.75 liters each. Find the number of bottles.

The number of bottles = 243.75 ÷ 0.75 = 325 bottles

4 A rectangle has an area of 10.25 square meters and a length of **4.1** meters. Calculate the width and perimeter of the rectangle.

Width = 10.25 ÷ 4.1 = 2.5 m.

P = (2.5 + 4.1) X 2 = 13.2 m.

Accumulative Assessments on Units 1- 5

Assessment 1

First: Choose the correct answer:

1. 0.01 kilogram= .... gram(s)

   a) 1   **b) 10**   c) 100   d) 1,000

2. 4.5 X 12 = ...

   a) 540   b) 0.54   c) 5.4   **d) 54**

3. The **smallest** odd prime number is ....

   a) 0   b) 1   c) 2   **d) 3**

Second: Complete the following:

1. 73.2 X 0.1 = **7.32**
2. 65.4 ÷ 100 = **0.654**
3. The factors of **28** are **1 , 2 , 4 , 7 , 14 , 28**

Third: Find the result using your preferred strategy:

1. 1.44 ÷ 0.6 = **2.4**
2. 2.45 X 2.1 = **5.145**
3. 45.69 + 24.38 = **70.07**
4. 100.25 – 74.9 = **25.35**

Fourth: Compare using (<, = or >):

1. Fifty and seventy-five hundredths **<** 75.50
2. 4 + 0.2 + 0.05 + 0.004 **<** 40 + 2 + 0.5 + 0.04
3. The smallest even prime number **<** The smallest odd prime number

Fifth Answer the following:

Hussam caught a fish weighing **1.035** kg and Essam caught a fish weighing **825** grams. What is the difference between the weights of the two fish in kilograms?

The difference = 1.035 – 0.825 = 0.21 kg

Assessment 2

First: Choose the correct answer:

1. Samah bought **three** books. The price of one book is **3.25** pounds, so the amount that Samah paid = ... pounds.
   - a) 9
   - b) 10
   - c) 9.75 ☑
   - d) 9.5
2. The prime number the sum of whose factors sum is 6 is ....
   - a) 6
   - b) 5 ☑
   - c) 12
   - d) 7
3. If **a** - 4.5 = 6, then the variable "a" expresses ....
   - a) the sum of the two numbers ☑
   - b) the difference between the two numbers
   - c) half of the two numbers
   - d) twice the two numbers
4. 4.6 X .... = 4,600
   - a) 100
   - b) 1,000 ☑
   - c) 10
   - d) 1

Second: Complete the following:

1. 700 + 8 + 0.3 + 0.009 = **708.309**
2. The first 5 multiples of 6, except zero are **6** , **12** , **18** , **24** , **30** .
3. 1.02 X 0.9 = **0.918** .

Third: Find the result using the strategy you prefer:

1. 5.635 ÷ 2.3 = **2.45**
2. 50.23 X 15 = **753.45**
3. 8.15 X 0.1 = **0.815**
4. 7 ÷ 0.35 = **20**

Fourth: Compare using (<, = or >):

1. 13 X 1.2 **=** 156 X 0.1
2. 45.28 meters **<** 4 kilometers
3. 70 Hundredths **>** 70 Thousandths
4. 185 X 0.15 **>** 1.85 X 1.5

Assessment on Unit 6



First: **Choose the correct answer:**

1. $4.5 + 2.5 \times 2 =$ ....
   - a) 9.5 ✓
   - b) 14
   - c) 9
   - d) 14

2. $6 + 2.5 \times 0 - 2.7 =$ ....
   - a) $6 + 2.7$
   - b) 8.5×2.7
   - c) $6 + 2.5 - 2.7$
   - d) $6 - 2.7$ ✓

3. The mathematical expression that represents "Multiply 1.5 by 1.2, then subtract 0.5" is ....
   - a) $1.5 + 1.2 \times 0.5$
   - b) $0.5 - 1.5 \times 1.2$
   - c) $1.5 \times 1.2 - 0.5$ ✓
   - d) $0.5 \times 1.2 - 0.5$

4. The mathematical expression "$1.2 + 2.5 \div 0.5$" expresses ....
   - a) add 1.2 and 2.5, then divide by 0.5
   - b) divide 2.5 by 0.5, then add 1.2 ✓
   - c) add 0.5 and 1.2, then divide by 2.5
   - d) divide 0.5 by 2.5, then add 1.2

5. $1.3 + 0.3 - 0.2 \times 2.5 =$ ....
   - a) $1.3 + 0.1 \times 2.5$
   - b) $2.6 - 0.1 \times 2.5$
   - c) $1.3 + 0.3 - 0.5$ ✓
   - d) $1.3 + 0.3 - 0.05$

6. The pattern rule of (11 , 22 , 33 , 44 , 55 , 66 ....) is ....
   - a) $n + 11$ ✓
   - b) $n - 11$
   - c) $n \times 11$
   - d) $n \div 11$

7. The next number in the pattern (1 , 3 , 5 , 7 , 9, 11 , ...) is ....
   - a) 20
   - b) 15
   - c) 13 ✓
   - d) 22

8. $n \times 0.2$ is the rule of ....
   - a) 2 , 2.2 , 2.4 , 2.6 , 2.8 , ...
   - b) 2 , 0.4 , 0.08 , 0.016 , ... ✓
   - c) 20 , 10 , 5 , 2.5 , 1.25 , ...
   - d) 8 , 7.8 , 7.6 , 7.4 , 7.2 , 7 , ...

9. $[\,2 \times (4 + 0.5) - 4.5\,] \div 4.5 =$ ....
   - a) 0
   - b) 1 ✓
   - c) 9
   - d) 10

10. The rule of the following pattern is ....

Input	Output
2	7
4	13
6	19
8	25

   - a) $n \times 3 - 1$
   - b) $n \times 2 + 3$
   - c) $n \times 3 + 1$ ✓
   - d) $n + 1 \times 3$

Second: Complete the following:

1. $45 \times 2 + 3 \times 3 =$ ...... **99** ......
2. $4.5 + [2 \times (5 - 4) - 1] =$ ...... **5.5** ......
3. 2, 2, 4, 6, 10, 16, ... **26** ...... , ... **42** ......
4. 3, 6, 9, 12, 15, ... **18** ...... , ... **21** ......
5. $12.5 + 2.5 \times 1.4 - 6 =$ ...... **10** ......

Third: For each problem, write an expression that matches the clues. Then, evaluate the expression:

1. Subtract 2.1 from 3.62, then multiply by 3.

   $(3.62 - 2.1) \times 3 = 1.52 \times 3 = 4.56$

2. Divide 85 by 0.5, then add 136.7.

   $85 \div 0.5 + 136.7 = 170 + 136.7 = 306.7$

Fourth: Using the given information, list the first five numbers in the pattern:

1. Starting number: 2 **Rule:** n + 2.5

   2 , **4.5** , **7** , **9.5** , **12** .

2. Starting number: 5 **Rule:** n X 2 – 2.5

   5 , **7.5** , **12.5** , **22.5** , **42.5** .

3. Starting number: 40 **Rule:** n ÷ 0.2

   40 , **200** , **1,000** , **5,000** , **25,000** .

Fifth: Answer the following:

Monir travels 38.7 kilometers by bicycle in two hours. If he cycles at the same rate all the time, how many meters does he travel per minute?

$38,700 \div 120 = 322.5$ m .

Accumulative Assessments on Units 1- 6

Assessment 1

First: **Complete the following:**

1. ......0.38...... + 0.62 = 1
2. ......7...... X 1,000 = 7,000
3. 4.2 X 10 – 8.2 = ...33.8......
4. If χ + 15.2 = 14.5 + 15.5, then χ = ...14.8...... .

Second: **Choose the correct answer:**

1. 6 + c = 2.1 is called ....
   - a) equation (boxed)
   - b) expression
   - c) multiplication
   - d) division
2. The multiplication problem that expresses the corresponding model is ....

	800	7
4		

   - a) 4 X 870
   - b) 4 X 807 (boxed)
   - c) 4 X 780
   - d) 4 X 708
3. 1,001 X 25 = ...
   - a) 2,525
   - b) 25,025 (boxed)
   - c) 250,025
   - d) 5,225
4. 2.51 X .... = 0.0251
   - a) 0.1
   - b) 0.01 (boxed)
   - c) 0.001
   - d) 100

Third: **Match:**

1. The difference between 5.5 and 3.7	a) 3.7 + 5.5 = y
2. The sum of 5.5 and 3.7	b) 3.7 + a = 5.5
3. 3.7 plus a number equals 5.5	c) m – 3.5 = 3.7
4. 5.5 minus a number equals 3.7	d) 5.5 – 3.7 = x
5. a number minus 3.5 equals 3.7	e) 5.5 – n = 3.7

(Matched: 1 → d, 2 → a, 3 → b, 4 → e, 5 → c)

Fourth: Answer the following:

1 Write the rule by finding the missing values in the tables:

Rule: n ÷ 3 .

Input	Output
39	13
33	11
27	9
21	7
15	5

2 Find 18.2 X 2.8: 50.96 .

3 While dividing a number by 3. Ahmed got a quotient of 7 and a remainder of 2.

What is the number? 23 .

Assessment 2

First: Complete the following:

1 4.8 ÷ 6 X 0.5= 0.4

2 If n = 2 X 2 X 7 then, n = 28 .

3 If a X 9 = 36, then a = 4 .

4

	40	5
70	2,800	350
5	200	25

Second: Choose the correct answer:

1 k - 3.21 = 5 , then k = ...

a 5 – 3.21 b 5 + 3.21 c 2 d 1.23

2 The greatest common factor of 21 and 7 is ....

a 7 b 21 c 28 d 14

3 18 ÷ 3 = 6 R ....

[a 0] b 5 c 2 d 15

4 1.5 + n is the rule of ....

a 2.5 , 3.5 , 4.5 , 5.5 , 6.5 , ...
[b 2 , 3.5 , 5 , 6.5 , 8 , ...]
c 4 , 4.5 , 5 , 5.5 , 6 , 6.5 , ...
d 2 , 4.5 , 7 , 9.5 , 12 , 14.5 , ...

Third: Match:

1 4.8 ÷ 0.2 X 0.4 + 1.2 → c
2 4.8 ÷ 0.2 X (0.4 + 1.2) → d
3 4.8 ÷ (0.2 X 0.4) + 1.2 → a
4 4.8 ÷ [(0.2 X 0.4) + 1.2] → b

a 61.2
b 3.75
c 10.8
d 38.4

Fourth: Answer the following:

1 Write the rule by finding the missing values in the tables:

Rule: ....(n + 3).... .

Input	Output
5	8
7	10
9	12
11	14
13	16

2 5, 262 ÷ 50 **(Using the standard algorithm)**

105.24

3 Ali bought **24** boxes of soft drinks for **115** LE each. How much money did Ali pay?

All paid = 24 X 115 = 2,760 L.E

Final Revision

First: **Choose the correct answer:**

1. Seven milliard, fifty thousand and seven hundredths = ...

   (7,050.07 or 7,000,050.07 or 7,000,050,000.07 or 7,000,050,000,.07)

2. The place value of 5 in 528,239.247 is ....

   (Hundred Millions or Hundred Thousands or Hundreds or Hundredths)

3. $4\frac{45}{100}$ = ... (4.45 or 44 or 4.045 or 45.4)

4. 2.053 = ... ($20\frac{53}{100}$ or $205\frac{3}{10}$ or $2\frac{53}{1000}$ or $\frac{753}{1000}$)

5. 4 million = ...Ten Thousand (400 or 4,000 or 40,000 or 400,000)

6. 6 hundredths = ... (6 or 0.60 or 0.060 or 0.006)

7. 6 tenths, 9 thousandths = ... (0.609 or 0.069 or 6.009 or 0.906)

8. Five thousand, two hundred and twenty-three thousandths = ...

   (5,200.230 or 5,200. 23 or 520.023 or 5,200.023)

9. In ...., the place value of 5 is Hundredths.

   (500.46 or 46.005 or 40.056 or 46,500)

10. The digit that represents the Thousandths in 4,568.178 is ....

    (1 or 7 or 8 or 4)

11. The value of .... increased when multiplying by 10 to 25.26.

    (25.26 or 252.6 or 2.526 or 2,526)

12. The value of .... decreased when dividing by 10 to 0.026.

    (0.026 or 0.26 or 2.6 or 26)

13. .... X 10 = 258 (2580 or 258 or 25.8 or 2.58)

14. 45 X 10 = ... (450 or 0.45 or 4.5 or 40.5)

15. 8.05 ÷ 10 = ... (805 or 8.5 or 80.5 or 0.805)

16 When all digits of a number move one place to the left, its value ....

(decreases or increases or does not change or other)

17 When all digits of a number move one place to the .... its value decreases.

(right or left or other)

18 23 + 0.02 + 0.003 = ...   (2,302,00 or 2,323 or 23.023 or 23.23)

19 824.12 = ... (824+1+2 or 824+12 or 824+0.12 or 800+200+4+10+2)

20 When 56.73 is multiplied by 10, the value of the digit 7 ....

(Does not change or increases from 0.7 to 7 or increases from 70 to 700 or decreases from 0.7 to 0.07)

21 What would the number 3.263 become if it were increased by a factor of 10?

(3.263 or 0.3263 or 326.3 or 32.63)

22 400 + 50 + 0.2 + 0.004 = ... (450.24 or 450.024 or 450.204 or 45.204)

23 85 ÷ 10 = ...   (8.5 or 0.85 or 0.085 or 850)

24 34 X .... = 3400   (100 or 1000 or 10 or 1)

25 56.73 < ....   (56.69 or 56.8 or 56.075 or 56.729)

26 0.32 X 10 ☐ 3.2 ÷ 10   (< or = or > or ≤)

27 56 < .... < 57   (562 or 57.3 or 5.6 or 56.02)

28 .... ≈ 2.5 (To the nearest 0.1)   (2.445 or 2.456 or 0.536 or 2.05)

29 56.298 ≈ 56.30 (To the nearest ....   (100 or 10 or 0.01 or whole number)

30 381.657 ≈ .... (to the nearest Hundredth)

(381.667 or 400 or 381.66 or 381.60)

31 59.16 .... 59.6   (< or > or = or otherwise)

32 The smallest number in the following is ....

(40.0 or 39.210 or 39.02 or 39.2)

33 0.174 ≈ 0.17 to the nearest ………… .

(Tenth or Hundredth or Hundred or Thousandth)

34 45 + 0.5 ☐ 450 + 0.05 (< or > or = or ≤)

35 0.300 = ………… . (3 tenths or 300/100 or 30/10 or 3/100)

36 ………… ≈ 75.3 (To the nearest Tenth)

(75.03 or 75.39 or 750.3 or 75.34)

37 78.098 ≈ ………… . (To the nearest whole number) (78.1 or 78 or 79 or 7)

38 4,000 + 40 + 0.4 + 0.04 = ………… .

(4,040.44 or 44.44 or 444.04 or 4,400.40)

39 ………… ≈ 75.60 (To the nearest Hundredth)

(75.694 or 75.607 or 75.599 or 75.697)

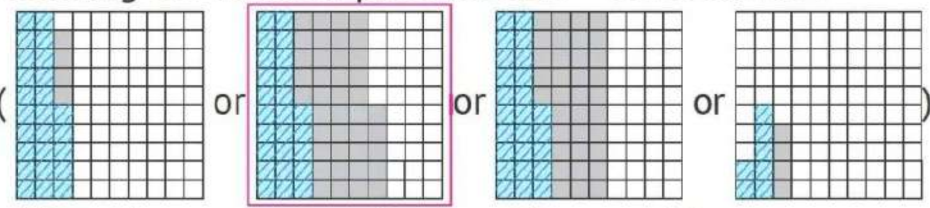
40 4 Tenths + 3 Thousandths = ………… Thousandths.

(0.403 or 7 or 43 or 403)

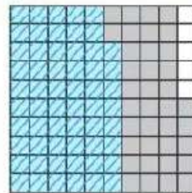
41 0.256 + ………… = 1 (0.854 or 1.744 or 0.8 or 0.744)

42 5.25 + 32.7 = ………… . (37.92 or 8.52 or 85.2 or 37.95)

43 The model representing the addition problem 0.25 + 0.4 is ………… .



44 The addition problem that represents the opposite model is ………… .



(0.58 + 3.7 or 5.8 + 0.37 or 5.8 + 3.7 or 0.58 + 0.37)

45 The benchmark decimal closest to 2.01 is ………… .

(1 or 1.5 or 2 or 2.5)

46 The estimate of 78.089 – 5.247 using rounding to the nearest 0.01 strategy is .... (72.84 or 72.842 or 72.9 or 65)

47 12.78 – .... = 8.8 (3.98 or 21.58 or 11.9 or 13.66)

48 7.15 – 2.6 = ... (4.55 or 9.75 or 6.09 or 7.41)

49 1 – .... = 0.47 (1.47 or 1.53 or 0.53 or 0.47)

50 8 – 0.45 = ... (8.45 or 8.55 or 7.45 or 7.55)

51 The sum of 462 and 11.2 has .... decimal place(s). (1 or 2 or 3 or 0)

52 the composite number in the following numbers is ....

(7 or 13 or 15 or 5)

53 18.58 = ... (To the nearest whole number) (59 or 19 or 18 or 18.6)

54 20 + 0.07 + 0.008 = ... (20.078 or 20.78 or 20.708 or 20.80)

55 59.16 ☐ 59.6 (< or > or = or otherwise)

56 45+y –2.5 is a/an ....

(variable or mathematical expression or equation or other)

57 "Ahmed sleeps 7 hours a day." is a/an ....

(variable or mathematical expression or equation or other)

58 In the equation 45 – m = 25. If 45 represents the number of students in one of the classes and 25 represents the number of girls in this class, then the variable m represents the ....

(number of girls or number of boys or number of students or number of teachers)

59 The bar model that expresses the equation x + 3.5 = 11.3 is ....

(

11.3	
x	3.5

or

11.3	
x	8

or

11.3	
8	x

or

x	
3.5	11.3

)

60 Using the opposite bar model: x = ...

3.16	
x	2.8

(2.8 or 1.8 or 1.64 or 0.36)

61 The equation that represents the sum of 6.35 and 3.14 is ....

(m = 6.35 + 3.14 or m – 3.14 = 6.35 or m – 6.35 = 3.14 or m = 6.35 – 3.14)

62 The bar model that expresses the equation x – 2.6 = 1.4 is ....

x	
2.6	1.4

or

2.6	
x	1.4

or

1.4	
x	2.6

or

2.6	
x	4

63 .... is a prime number. (51 or 52 or 57 or 59)

64 .... is a factor of 24. (14 or 18 or 17 or 12)

65 The numbers 2, 3, 5, 7 are .... numbers .

(even or odd or prime or composite)

66 The smallest prime number formed from two digits is ....

(2 or 10 or 11 or 12)

67 The greatest common factor of any two prime numbers is ....

(The largest number or the smallest number or one or zero)

68 The GCF for the pair (30 , 25) is .... (25 or 5 or 10 or 3)

69 Subtract 7.4 from 8.6 written ....

(7.4 – 8.6 or 8.6 – 7.4 or 8.6 X 7.4 or 8.6 ÷ 7.4)

70 ...... is a factor of the number 35 (2 or 3 or 5 or 6)

71 Which of the following is a common multiple of 9 and 6?

(3 or 12 or 27 or 18)

72 The only even prime number is .... (2 or 0 or 3 or 10)

73 The number .... is the common factor of all numbers .

(0 or 1 or 2 or 3)

74 From the multiples of 7 is .... (15 or 22 or 35 or 4)

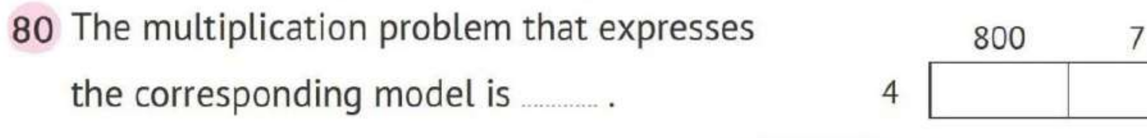
75 The greatest common factor of 21 and 7 is .... (7 or 21 or 28 or 14)

76 21 is one of the multiples of the number .... (2 or 5 or 6 or 7)

77 5 kg = ... gm. (50 or 500 or 5,000 or 0.005)

78 1,001 × 25 = ... (2,525 or 25,025 or 250,025 or 5,225)

79 The multiplication problem that expresses the corresponding area model is ....



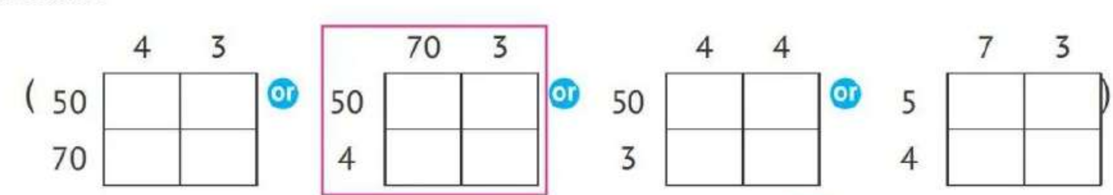
(5 X 915 or 5 X 183 or 5 X 143 or 5 X 12)

80 The multiplication problem that expresses the corresponding model is ....

800 7
4

(4 X 870 or 4 X 807 or 4 X 780 or 4 X 708)

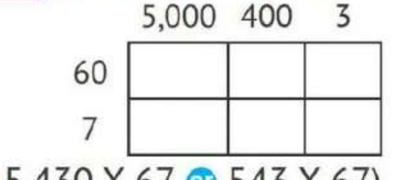
81 The area model that represents.(50 X 70) + (50 X 3) + (4 X 70) + (4 X 3) is ....



82 (25 X 2) + (25 X 7) = 25 X .... (9 or 27 or 72 or 14)

83 7 X (500 + 4) = ... (7 X 54 or 7 X 504 or 7 X 5,004 or 7 X 9)

84 The problem that represents the opposite area model is ....



(5,403 X 67 or 5,043 X 67 or 5,430 X 67 or 543 X 67)

85 600 X 400 = ... (240,000 or 24,000 or 2,400 or 240)

86 60 is twice .... (30 or 60 or 120 or 10)

87 (4 X 85) + (2 X 85) = ... x 85 (24 or 42 or 8 or 6)

88 30 days = ... weeks, ... days

(4 weeks, 28 days or weeks, 8 days or 4 weeks, 2 days or 28 weeks, 2 days)

89 25 X 7,561 = ... (188,025 or 177,005 or 175,705 or 189,025)

90 2 $\frac{1}{2}$ days = ... hours (60 or 50 or 48 or 24)

91 876 X 72 is closer to .... (56,000 or 5,600 or 63,000 or 72,000)

92 75 x 25 = [70 x 20] + [70 x 5] + [5 x 20] + [....................])

(5 x 5 or 5 x 50 or 50 x 5 or 50 x 50)

93 6 X 65 = (6 X 5) + (6 X ....) (6 or 60 or 0.6 or 600)

94 The quotient in the opposite model is ....

(435 or 4,305 or 4,350 or 4,035)

	4,000	30	5
	254,205	2,205	315
63	− 254,205	− 1,890	− 315
	220,5	315	0

95 If 26 X 155 + 20 = 4,050, then the remainder of 4,050 ÷ 26 is ....

(20 or 26 or 155 or 4,050)

96 4,444 ÷ 44 = ... (1111 or 110 or 101 or 1001)

97 The dividend in the division 24 ÷ 6 = 4 is .... (24 or 6 or 4 or 0)

98 The quotient in the following division model is ....

(5,248 or 12 or 4 or 437)

```
       0437
  12 | 5,248
     -  48
         44
     -   36
          88
     -    84
           4
```

99 24,000 ÷ 600 = ... (4 or 40 or 400 or 4,000)

100 2,215 ÷ 15 = 147 R .... (0 or 5 or 10 or 15)

101 29 ÷ 4 = 7 R .... (0 or 1 or 2 or 3)

102 [Quotient x Divisor] + Remainder = ...

(Divisor or Quotient or Remainder or Dividend)

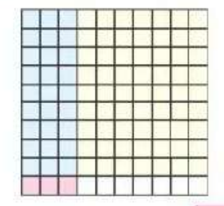
103 1, 1, 2, 3, 5, ... in the same pattern (15 or 6 or 7 or 8)

104 654 ÷ .... = 654 (10 or 100 or 1 or 0)

105 Any number dividing by itself (except zero) equals ....

(0 or 1 or itself or undefined)

106 The multiplication problem that represents the opposite model is ....



(0.3 X 0.9 or 3 X 9 or 0.3 X 9 or 3 X 0.9)

107 If 12 X 45 = 540, then .... X 0.45 = 540 (1.2 or 0.12 or 120 or 1,200)

108 The product of 0.01 X 0.1 has .... decimal places. (1 or 2 or 3 or 4)

109 0.09 × 0.3 = ... (0.27 or 0.027 or 2.7 or 0.0027)

110 7,641 ÷ 1,000 =.................. . (7.641 or 76.41 or 764.1 or 1)

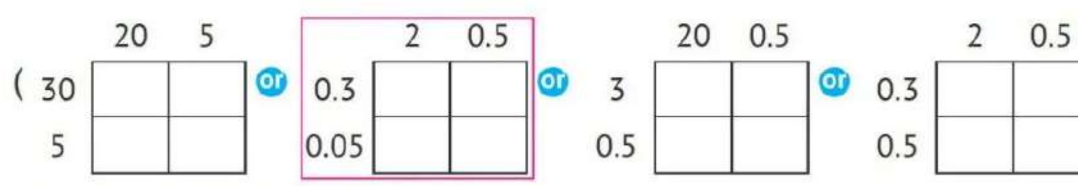
111 4,632 meters = ... kilometers (4.632 or 46.32 or 463.2 or 4632)

112 78.5 m = ... cm (785 or 7.85 or 7,850 or 0.785)

113 .... kg = 460 gm (0.46 or 460,000 or 4.60 or 4,600)

114 5.2 L = ... mL (0.052 or 0.52 or 52 or 5,200)

115 The area model that expresses 2.5 X 0.35 is ....



116 Adding 13.5 and 2.5 then divide the sum by 4 is written as ....

(13.5 + 2.5 ÷ 4 or [13.5 + 2.5] ÷ 4 or 13.5 + [2.5 ÷ 4] or 13.5 - [2.5 ÷ 4])

117 There are .... grams in 10 kilograms. (10 or 100 or 1,000 or 10,000)

118 0.2 × 1.12 = ... (224 or 22.4 or 2.24 or 0.224)

119 45 - 2.1 x 4.1 + 32 = ... (68.39 or 207.89 or 6.839 or 20.789)

120 5.6 + 0.5 – 0.4 X 1.5 = ...

(6.1 – 0.6 or 5.6 + 0.1X 1.5 or 5.6 + 0.5 – 0.6 or 6.1 – 0.4 X 1.5)

121 The pattern rule of (15 , 21 , 27 , 33 , 39 , 45 , ... is ....

([n + 6] or n – 6 or n X 6 or n ÷ 6)

122 The rule of the following pattern is ....

([n X 2 + 1] or (n + 1) X 2 or n + 1 X 2 or (n + 2) X 1)

Input	Output
5	11
6	13
7	15

123 If the input is 5 and the output is 0.5, then the rule is ....

(n X 10 or n – 10 or [n ÷ 10] or n + 10)

124 Pattern rule of 2 , 4 , 6 , 8 , ... is: ....   (n or n + 4 or [n + 2] or n + 1)

125 An employee works 480 minutes a day. Calculate the number of minutes an employee works in 7 days ....

(480 – 7 or 480 ÷ 7 or [480 X 7] or 480 +7)

126 The variable in equation 47.8 = X + 32 is ....   (15.8 or [x] or 47.8 or 32)

127 2.9 ÷ 0.3 = ...   ([29 ÷ 3] or 2.9 ÷ 3 or 29 ÷ 3 or 29 ÷ 30)

128 Which of the following is an equation?

(34 X 12 or 89 - 34 or [3.6 + 1.6 = x] or 14.2 - 3.574)

Second: Complete the following:

1. In 5,350.68 the digit 6 is in the **Tenths** place and its value is ...**0.6**... .
2. 9,003.36 (In word form): ...**Nine thousand three and thirty-six hundredths**
3. 0.523 = ...**3**... Thousandths, ...**2**... Hundredths, ...**5**... Tenths
4. The value of 12.7 decreased when dividing by 10 to ...**1.27**... .
5. ....**27**........... ÷ 10 = 2.7
6. 2,409.008 (decomposed): **2,000 + 400 + 9 + 0.008**
7. 30 + 4 + 0.6 + 0.02 = ...**34.62**...... .   [in standard form]
8. 45.012 = 45 + ...**0.012**... .

9. 45.269 ≈ 45.27 . (To the nearest 0.01)
10. 0.909 ≈ 1 (To the nearest whole number)
11. 65.25 ≈ 65 . (To the nearest whole number)
12. 3 Tenths + 28 Thousandths = 328 Thousandths
13. 97 thousandths - 49 thousandths = 48 thousandths .
14. 4 Hundredths + 35 Thousandths = 75 Thousandths.
15. The benchmark decimal closest to 1.57 is 1.5 .
16. 6,966.34 = 6,000 + 900 + 0.3 + 60 + 0.04 + 6
17. If e = 7.102, then e − 5.102 = 2 .
18. Using the equation f + 0.28 = 9.07,
    fill the model then find the value of f = 8.79 .

9.07	
f	0.28

19. 2 is the smallest prime number.
20. Zero is a common Multiple of all numbers
21. One is a common Factor of all numbers
22. 3 is the smallest odd prime number.
23. Prime number is a number greater than one and has only two factors.
24. The smallest 2-digit prime number is 11 .
25. The prime number whose factors sum is 12 is 11 .
26. The multiples of 6 between 20 and 30 are/ is 24 .
27. The number whose prime factors 2 , 2 , 3 , 3 is 36 .
28. The GCF of 8 and 12 is 4 .
29. The GCF of 9 and 20 is 1 .
30. The LCM of any two prime numbers is Their product .
31. The GCF of any two prime numbers is 1 .
32. The common multiple of all numbers is 0 .
33. The LCM of 5 and 3 is 15 .

34 16 days ≈ ......**2**...... weeks "to the nearest week"

35 43 months ≈ ...**4**... year. (To the nearest year)

36 5 cm = ...**50**...... mm

37 In the division equation 29 ÷ 3 = 9 R2 the remainder is ......**2**...... .

38 If 25 x 25 = 625, then 626 ÷ 25 = 25 R ......**1**...... .

39 Quotient x divisor + remainder = **Dividend**.

40 Million x zero [**<**] 7.2 x 1 [using >, < or =]

41 0.75 X 100 = ...**75**...... .

42 4,258 cm = ...**4,258**...... X ......**0.01**...... = ...**42.58**...... m

43 12.5 ÷ ......**0.1**...... = 12.5 X ......**10**...... = 125

44 The product of 689 x 21 is closer to the product of ......**700**...... x ......**20**...... .

45 0.25 ÷ ......**0.01**...... = 25

46 ......**20**...... ÷ 100 = 0.2

47 The product of 13.5 x 2.2 = ...**29.7**...... .

48 50 x 120 = ...**60**...... hundreds

49 (40 X 30) + (40 X 8) + (7 X 30) + (7 X 8) = ...**47**...... X ......**38**...... .

50 137 cm = ...**1.37**...... m

51 The Ones digit of the product of 4,287 x 53 will be ......**1**...... .

52 ......**632**...... ÷ 100 = 6.32

53 5.6 X ......**1,000**...... = 56 ÷ 0.01

54 If 326 x 7 = 2,282, then 0.326 x 7 = ...**2.282**...... .

55 0.008 km = ...**8**...... m

56 There are ......**14,000**...... milliliters in 14 litters.

57 18 kg = ...**18.000**...... g.

58 63 Hundredths x 5 = ...**3.15**...... .

59 0 ÷ 51,362 = ...**0**...... .

60 $1.5 + 2.5 + 0.7 =$ ....4.7.... .

61 $2.5 \times 8 \div 0.5 =$ ....40.... .

62 $[(20.5 - 10) \times 0.3] \div 0.1 =$ ....31.5.... .

63 2, 5, 8, 11, 14, 17, ...20.... , ...23.... Rule: ..n + 3.. .

64 3 , 8 , 13 , 18, ...23.... , ...28.... Rule: ..n + 5.. .

Third: **Answer the following:**

1 Mahmoud is planning a trip from Cairo to El Fayoum. He will travel 147.72 kilometers. Round the distance to the nearest whole number.

....148 km....

2 Tamer drinks 1.5 liters of water per day. If he drinks 0.5 liters of water in the morning and 0.7 liters at lunch, how many liters of water does he drink in the evening?

....1.5 – (0.5 + 0.7) = 0.3 L....

3 Emad had 56.5 pounds. He bought a pen for 12.25 pounds and a notebook for 15.5 pounds. How much money does Emad have left?

....56.5 – (12.25 + 15.5) = 28.75 pounds....

4 A classroom in a school has 21 girls and 15 boys.
How many students are there in this class? (Use the bar model)

....X = 21 + 15 = 36 students....

X	
21	15

5 Two numbers their sum is 255 and one of them is 107.5.
What is the other number? (Use the bar model)

....x =225 – 107.5 = 117.5....

225	
X	107.5

6 Fill in the bar model, then find the solution:

$2.456 + x = 7.382$

X = 7.382 - 2.456 = 4.926

7.382	
X	2.456

7 Fill in the bar model, then find the solution:

$w = 9.2 - 5.025$

w = 9.2 - 5.025 = 4.175

9.2	
w	5.025

8 Adel goes to the club every 3 days to train for football, and his friend Ahmed goes to the same club every 4 days to train for volleyball. If they went to the club today, after how many days do the two friends meet?

after 12 days

9 Omar owns 12 buses to transport tourists, each bus can carry 25 passengers. How many passengers can Omar carry each day if each bus is full?

12 x 25 = 300 passengers

10 A rectangular piece of land has a length of 256 meters, and a width of 62 meters. Find its area.

area = 256 x 62 = 15,872 m^2

11 Mona saves 1,023 pounds every month. What is the total amount that Mona saves in 18 months?

1,023 x 18 = 18,414 pounds

12 A teacher has 96 books and wants to distribute them equally among 4 students. How many books will each student get?

96 ÷ 4 = 24 books

13 Murad bought 76 candies and distributed them equally among 6 of her friends. How many candies will each friend get? Will there be any candy left with Murad?

76 ÷ 6 = 12 R4

14 A box has 256 balls. How many balls are in eight identical boxes?

256 x 8 = 2,048 balls

15 The owner of a juice shop owns 2,880 paper cups. If he uses them within 12 days equally, how many cups did he use every day?

2,880 ÷ 12 = 240 cups

16 A travel agency wants to divide 480 passengers using microbuses, each one has 15 seats. How many microbuses can the travel agency use?

480 ÷ 15 = 32 microbuses

17 Adel bought a car for 69,380 pounds and paid 65,940 pounds in advance of, then he will pay the rest over four monthly installments .
What is the value of the monthly installment?

the left money = 69,380 - 65,940 = 3,440 pounds

Value of each installment = 3,440 ÷ 4 = 860 pounds

18 Use the distributive property of multiplication and the area model to find the product of 26 x 43.

(20 X 40) + (20 X 3) + (6 X 40) + (6 X 3) = 1,118

19 Arrange the following in an ascending order:

1.351 , 1.135 , 1.531 , 1.315 , 3.135

1.135 , 1.315 , 1.351 , 1.531 , 3.135

20 The weight of Farida is 45.235 kg, and the weight of Mazen is 52.012 kg, Find their weight together

45.235 + 52.012 = 97.247 kg

21 Hanaa has 200 pounds. She wants to buy a pair of shoes for 99.8 L.E a bag for 45.75 L.E. and a dress for 70.25 L.E

Can she buy all she wants? why?

99.8 + 45.75 + 70.25 = 215.8 pounds she can not

22 [72.12 + 2.71] x 10 = 748.3 .

23 Find the common factors and GCF of 36 and 24:

- Factor of 36: 1 , 2 , 3 , 4 , 6 , 9 , 12 , 18 , 36 .
- Factor of 24: 1 , 2 , 3 , 4 , 6 , 8 , 12 , 24 .
- Common factors: 1 , 2 , 3 , 4 , 6 , 12 .
- GCF = 12 .

24 Marwa saved 125 pounds ,Ahmed saved 10 times as Marwa saved, Mariam saved 6 times as Marwa saved, how much money did they saved altogether?

Ahmed = 125 x 10 = 1,250 pounds Mariam = 125 x 6 = 750

Total = 1,250 + 750 + 125 = 2,125

25 Use the mathematical order of operations to evaluate the following expression. $7 + 3 \times [5 - (3 \times 1)] - 12 \div 10$

$7 + 3 \times 2 - 12 \div 10 = 11.8$

26 Using the given Rule, list the first five numbers in the pattern,
Starting number: 5, Rule: n + 5: 5 , 10 , 15 , 20 , 25 .

27 Farida bought 20 meters of fabric. If the price of one meter is 65.5 pounds, what is the price of the whole fabric?

$20 \times 65.5 = 1{,}310$ m

28 Mona had 95.5 LE, she spent 35.75 LE. Find the remainder with her

remainder = 95.5 - 35.75 = 59.75 pounds

29 Use the mathematical order of operations to evaluate the following expression. $3.3 \div 3 \times 10 - 10$

1

30 Write the expression : Subtract 2.6 from 9.8, then multiply the result by 0.01

$(9.8 - 2.6) \times 0.01 = 0.072$

31 Decompose the number 285.285 using the expanded form.

200 + 80 + 5 + 0.2 + 0.08 + 0.005

32 Order from the least to the greatest: 0.65 km, 590 meters, 0.8 km, 1 km

590 m , 0.65 km , 0.8 km , 1km

33 Solve the equation $K + 2.4 = 7.8$

$k = 5.4$

34 Use the opposite table to discover the rule, then find the missing numbers in the table.

The rule is:

$n + 1.5$

Input	Output
6	7.5
10	11.5
14	15.5
8.5	10
12.5	13.75
16	17.5

Model Exams

Cairo Governorate - Al-Basatin Educational Zone



First: Choose the correct answer:

1. 0.6 = ……0.60…… . (0.60 or 600 or 60 or 6)
2. The number whose all prime factors are 2, 3, and 5 is ……30…… . (6 or 10 or 15 or 30)
3. 89.75 X 100 = ……8,975…… . (8.975 or 897.5 or 8,975 or 89.750)
4. The smallest prime number is ……2…… . (0 or 1 or 2 or 3)
5. 20.149 [<] 20.9 (< or > or = or ≥)
6. 0.5 X 0.5 = ……0.25…… . (25 or 2.5 or 0.25 or 0.025)
7. If 25 X 65 = 1,625 , then 0.25 X 6.5 = ……1.625…… . (162.5 or 16.25 or 1.625 or 0.1625)

Second: Complete the following:

1. 3 thousandths + 82 hundredths = ……0.823…… .
2. 30 + 4 + 0.6 + 0.02 = ……34.62…… .
3. 9.99 + 9 = ……18.99…… .
4. 142.6 X 0.01 = ……1.426…… .
5. 2.134 kg = ……2,134…… gm
6. The common multiple of all numbers is ……0…… .
7. 20.46 ≃ ……20…… . (To nearest whole number)
8. The next number in the pattern (2, 5, 8, 11, …) is ……14…… .

Third: Choose the correct answer:

1. $\frac{453}{1,000}$ = 0.453 . (4.53 or 45.3 or **0.453** or 0.0453)
2. The value of the digit 8 in 3.587 is 0.08 . (0.8 or **0.08** or 0.008 or 8)
3. 4.2 +3.467 = 7.667 . (43.267 or 12.667 or 1.267 or **7.667**)
4. If K + 15 = 40.5 , then K = 25.5 . (35.5 or 34.5 or **25.5** or 24.5)
5. Which of the following is an equation?

   (50+ n or 0.35 - n or **50+ n = 80** or 45 x n)
6. 2.9 ÷ 0.3 = 29 ÷ 3 . (29 ÷ 3 or 2.9 ÷ 3 or **29 ÷ 3** or 29 ÷ 30)
7. 5 x 124 = 5 x (100+ 20 +4) (500 or 514 or 24 or **20**)

Fourth: Answer the following:

1. Find the GCF and LCM of 12 and 18.

   12 = 2 X 2 X 3

   18 = 2 X 3 X 3

   GCF = 2 X 3 = 6

   LCM = 2 X 2 X 3 X 3 = 36
2. Solve: 12 + (4.6 - 2.6) x 4

   12 + (4.6 – 2.6) X 4 = 12 + 2 X 4 = 12 + 8 = 20
3. Write the expression:

   Subtract 2.6 from 9.8, then multiply the result by 0.01

   (9.8 – 2.6) X 0.01 = 7.2 X 0.01 = 0.072
4. Ali walks 14 kilometers each day. If he walked for 120 days, how many kilometers would he walk?

   The number of kilometers = 14 X 120 = 1,680 km

Giza Governorate - El Ayyat Educational Zone 2

First: Choose the correct answer:

1. The value of the digit 6 in 2.651 is ...0.6... (0.6 or 0.06 or 0.006 or 6)
2. 11 has ...2... factor(s). (1 or 2 or 3 or 4)
3. If h - 0.3 = 0.7 then h = ...1... . (1 or 0.2 or 0.3 or 0.4)
4. 85.3 X 0.1 = ...8.53... . (8.53 or 0.853 or 853 or 85.03)
5. The rule of the pattern 2 , 4 , 8 , 16 , 32 , ... is ...n X 2... .

   (n + 2 or n X 2 or n - 2 or n ÷ 2)
6. 12.76 ≃ ...13... (to the nearest whole number) (12.7 or 13 or 21 or 13.8)
7. 18 + 0.04 + 0.007 = ...18.047... . (18.47 or 18.74 or 18.074 or 18.047)

Second: Complete the following:

1. The place value of the digit 8 in 3.587 is hundredths
2. 3 tenths + 7 hundredths = ...0.37... .
3. 85, 80, 75, 70 , ...65... (In the same pattern)
4. 29 ÷ 4 = 7R ...1... .
5. 30,000 mL = ...30... L
6. The greatest common factor (GCF) of 8 and 12 is ...4... .
7. 6+ (2.4 X 10) = ...30... .
8. From the opposite bar model, the value of a = ...30.3... .

43.8	
a	13.5

Third: Choose the correct answer:

1. 3.41 X 100 = ...341... . (0.341 or 3.41 or 34.1 or 341)
2. The product of 19 X 403 is closer to = ...8,000... .

   (80,000 or 8,000 or 800 or 80)

3 Which of the following is an equation?

(34 X 12 or 89 - 34 or 3.6 + 1.6 = x or 14.2 - 3.574)

4 2.4 ÷ 0.4 = ... 6 .... (0.6 or 6 or 0.06 or 60)

5 Prime factors of 14 are .. 2 and 7.

(1 and 14 or 2 and 7 or 3 and 7 or 2 and 14)

6 3.19 [<] 31.9 (< or = or > or ≥)

7 4,632 meters = .. 4.632 .. kilometers (4.632 or 46.32 or 463.2 or 4632)

Fourth: Answer the following:

1 Maged ran 2.569 km on the first day, and 1.269 km on the second day. What is the difference between the two distances?

The difference = 2.569 – 1.269 = 1.3 km

2 Find the GCF and LCM for 12 and 18.

12 = **2 X 2 X 3**

18 = **2 X 3 X 3**

GCF = **2 X 3 = 6**

LCM = **2 X 2 X 3 X 3 = 36**

3 Decompose the number 285.285 using the expanded form.

285.285 = 200 + 80 + 5 + 0.2 + 0.08 + 0.005

4 If the price of a bottle of juice is 24.5 LE, what is the price of 100 bottles of the same juice?

The price of bottles = 24.5 X 100 = 2,450 LE

Giza Governorate - Imbaba Educational Zone

3

First: Choose the correct answer:

1. 12 X 10 = ...120.... (1.2 or 120 or 0.12 or 12)
2. The value of the digit "8" in 7.258 is ...0.008... (8 or 0.8 or 0.08 or 0.008)
3. The smallest prime number is ...2.... (0 or 1 or 2 or 3)
4. $\frac{158}{100}$ = ...1.58.... (1.58 or 1,580 or 15.8 or 0.158)
5. 50 X ...1,000... = 50,000 (10 or 100 or 1,000 or 10,000)
6. 6 X 65 = (6 X 5) + (6 X ...60...) (6 or 60 or 0.6 or 600)
7. If 4m = 24 then m = ...6.... (6 or 5 or 8 or 2)

Second: Complete the following:

1. 800 grams = ...0.8... kilograms
2. The common factor of all numbers is ...1....
3. 0.854 ≃ ...0.85... (to the nearest Hundredth)
4. If K + 3.25 = 6.25 then K = ...3...
5. 23 ÷ 5 = 4 R ...3....
6. If 5 X 24 = 120, then 5 X 2.4 = ...12....
7. 20 + 3 + 0.5 + 0.07 = ...23.57... [in standard form]
8. 16.07 - 10.3 = ...5.77....

Third: Choose the correct answer:

1. 21 is one of the multiples of the number ...7.... (2 or 5 or 6 or 7)
2. The next number in the pattern: 2,5,8,11,14,...... is ...17....
   (15 or 17 or 19 or 16)
3. 1.5 X 10 - 10.5 = ...4.5.... (15 or 10 or 1.5 or 4.5)

4 The divisor in the division 54 ÷ 9 = 6 is ..... 9 ..... . (54 or 9 or 6 or 1)

5 The common multiple of all numbers is ..... 0 ..... . (0 or 1 or 2 or 3)

6 0 ÷ 142 = ... 0 ..... . (0 or 1 or 142 or 2)

7 20 X 15 = ... 3 ..... Hundreds (30 or 3000 or 300 or 3)

Fourth: Answer the following:

1 Find the GCF for 9 and 12

9 = 3 X 3

12 = 3 X 2 X 2

GCF = 3

LCM = 3 X 3 X 2 X 2 = 36

2 Find the value of 1.2 X 32



1.2 X 32 = 38.4

3 Mariam saved 75.8 pounds and her brother saved 24.2. Find the total sum they saved.

They saved = 75.8 + 24.2 = 100 LE

4 Find the quotient: 144 ÷ 12



144 ÷ 12 = 12

Giza Governorate - El Dokky Educational Zone

4

First: Choose the correct answer:

1. Which of the following represents an equation?

(3.6 + 2.1 or a + 3.1 = 5 or y +7.5 or 7.7 - x)

2. The only even prime number is ......2...... (1 or 0 or 2 or 3)

3. 36 ÷ ......4...... = 9 (4 or 5 or 6 or 9)

4. The number four and forty-one thousandths in standard form is 4.041.

(4.41 or 0.441 or 4.041 or 41.4)

5. The rule of the pattern 2 , 5 , 8 , 11 ...... is ......n + 3......

(n + 1 or n + 2 or n + 3 or n +4)

6. ......24...... is a multiple of 3 (16 or 8 or 14 or 24)

7. The LCM of 3 and 5 is ......15...... (8 or 3 or 15 or 1)

Second: Complete the following:

1. 129 ÷ 100 = ...1.29......

2. 5 X 24 = 120 , then 0.5 x 2.4 = ...1.2......

3. The value of the digit 7 in 5.371 is ......0.07......

4. 0.72 ÷ 0.04 = ...72...... ÷ ......4...... = ...18......

5. 9 X 27 = [9 X ......20......] + [9 X 7]

6. 7 kg = ...7,000...... grams

7. 4.208 = ...4...... + 0.2 + 0.008

8. 8.639 ≃ ......8.64...... (to the nearest Hundredth)

Third: Choose the correct answer:

1. If 125 X 5 = 625, then 626 ÷ 5 = 125 R ......1...... (3 or 1 or 5 or 6)
2. 0.075 = 7.5 X ......0.01...... (1 or 0.1 or 0.01 or 0.001)
3. The number which its prime factors are 2 , 2 , 3 and 3 is ......36...... (6 or 4 or 9 or 36)
4. 3 hundredths + 5 hundredths = ...8...... hundredths (8 or 80 or 35 or 15)
5. 20 x 50 = ...1,000...... (100 or 1,000 or 10,000 or 10)
6. 123 ÷ 123 [>] 0 X 234 (= or < or > or ≤)
7. 8 + 14 ÷ 7 = ...10...... (7 or 8 or 9 or 10)

Fourth: Answer the following: (Show your steps)

1. Find the GCF of 6 and 10

   6 = 2 X 3

   10 = 2 X 5

   GCF = 2

   LCM = 2 X 3 X 5 = 30

2. Find the quotient of: 0.35 ÷ 0.5

   0.35 ÷ 0.5 = 3.5 ÷ 5 = 0.7

3. Ahmed bought 10 pens of the same type. If the price of one pen is 8.5 pounds, how much will Ahmed pay?

   Ahmed paid = 10 X 8.5 = 85 pounds

4. Order from the least to the greatest: 0.65 km, 590 meters, 0.8 km, 1 km

   590 m , 0.65 km , 0.8 km , 1 km

Al Azhar Al Sharif

5

First: Choose the correct answer:

1. The value of the digit 8 in 5.018 is ....0.008.... (8 or 0.08 or 0.008 or 0.8)
2. 357 cm = ...3.57.... m (0.357 or 3.57 or 357 or 35.7)
3. The rule of the pattern 2 , 4 , 6 , 8 , ... is ....n + 2....
   (n or n + 1 or n + 2 or n + 3)
4. The product of 23.9 X 0.1 = ...2.39.... . (239 or 23.9 or 2.39 or 0.239)
5. The greatest common factor "GCF" of 10 , 12 is ....2.... (1 or 2 or 3 or 5)

Second: Complete the following:

1. 7.45 $\simeq$ ....7.5.... "to the nearest Tenth"
2. The common factor of all numbers is ....1.... .
3. If Y + 1.2 = 7.5, then Y: ....6.3....
4. The least common multiple "LCM" of 2, 3 is ....6.... .
5. Twenty seven and five thousandths written as ....27.005....
   " in the standard form"
6. Order the following numbers from the least to the greatest
   45.072 , 45.702 , 45.729 , 45.572
   ....45.072 , 45.572 , 45.702 , 45.729....
7. Mohamed bought 3.75 kg of flour, he bought another 2.25 kg of it.
   How much flour did he buy?
   ....Mohamed bought = 3.75 + 2.25 = 6 kg....

Third: Choose the correct answer:

1. $23 \div 0.1 =$ 230 .... (230 or 23 or 2.3 or 0.23)
2. In 161.527, which digit is in the Thousandths place? (1 or 2 or 6 or 7)
3. What is the value of x in the area model of 43 X 27? (6 or 12 or 60 or 120)

	40	3
20	800	x
7	280	21

4. If 25 X 125 = 3,125 , then 3,126 ÷ 25 = 125 R 1 ....
   (125 or 125 R1 or 126 or 125 R6)
5. The composite number in the following is ....15.... (7 or 17 or 15 or 5)
6. 2.153 ≃ ....2.2.... (To the nearest Tenth) (2.1 or 2.15 or 2.14 or 2.2)
7. $2\frac{1}{2}$ days = ...60.... hours (60 or 50 or 48 or 24)

Fourth: Answer the following:

1. Find the GCF of 9 and 12

   9 = 3 X 3

   12 = 3 X 2 X 2

   GCF = 3

   LCM = 3 X 3 X 2 X 2 = 36

2. Find using any way 2,250 ÷ 25 (Show your steps)

   2,250 ÷ 25 = 90

3. Find 2.33 X 2.4 (Show your steps)

   2.33 X 2.4 = 5.592

4. Mohamed ran 2.569 km on the first day and 1.269 km on the second day. What is the difference between the two distances?

   The difference = 2.569 – 1.269 = 1.3 km

Alexandaria Governorate - Middle Educational Zone



First: Choose the correct answer:

1. 6 X 100 [>] 6 X 0.1 (< or > or = or otherwise)
2. The only even prime number is ......2...... (0 or 1 or 2 or 12)
3. The place value of the digit 7 in 8.97 is Hundredths (Hundred or Hundredths or Tenths or Thousandths)
4. 1.8 X 2 = ...3.6...... (3.5 or 4 or 6.3 or 3.6)
5. 85.5 g = ...0.0855... kg (85.5 or 8.55 or 0.855 or 0.0855)
6. 4.165 = ...4.2...... (to the nearest Tenth) (4 or 4.2 or 4.17 or 4.1)
7. 100 X 25 = 25 Hundreds (250 or 25 Hundreds or 25 Tenths or 25)

Second: Complete the following:

1. The LCM of 4 and 5 is ......20......
2. 6 + 0.08 + 0.001 = ...6.081...... (In standard form)
3. In the pattern: 20 , 25 , 30 , 35 , 40 , then the rule is ......n + 5......
4. The value of the underlined digit in 4.1<u>2</u> is ......0.02......
5. 2.157 liters = ...2,157...... milliliters.
6. 1.2 ÷ 0.4 = ...3......
7. The prime factors of 21 are ......3...... and ......7......
8. 8.41 - 6.35 = ...2.06......

Third: Choose the correct answer:

1. The value of x in the equation x + 0.5 = 2 ......1.5........ .

   (1.5 or 2.3 or 1.3 or 2.2)

2. Two and three Thousandths in standard form is ....2.003...... .

   (20.3 or 2.3 or 20.03 or 2.003)

3. 6 X 4.2 = (6 X 4) + (6 X ......0.2........) (0.2 or 0.02 or 2 or 2.2)

4. 32.92 + 62.71 = ...95.63...... . (9,563 or 9.563 or 0.9563 or 95.63)

5. 2 , 3 , 3 are prime factors of ....18.......... (1 or 3 or 12 or 18)

6. The dividend in the equation 36 ÷ 4 = 9 is .....36...... . (3.6 or 36 or 9 or 4)

7. 3.642 ≃ .....3.64... (to the nearest Hundredth) (4 or 3.7 or 3.6 or 3.64)

Fourth: Answer the following:

1. Find the GCF of 15 and 10

   15 = ...3 X 5..........

   10 = ...5 X 2..........

   GCF = ...5..........

   LCM = 3 X 5 X 2 = 30..........

2. 3.4 X 1.8

   3.4 X 1.8 = 6.12

3. Eyad caught a fish 44.5 cm long, and Zyad caught a fish 11.2 cm long. Find the sum of the lengths of the two fish.

   The sum of the lengths = 44.5 + 11.2 = 55.7 cm

4. Decompose the number 4.78

   4.78 = 4 + 0.7 + 0.08

Alexandaria Governorate - Al Agamy Educational Zone



First: Choose the correct answer:

1. The number "Four and one hundred sixty-two thousandths" in the standard form is **4.162** (0.4126 or [4.162] or 4,152,000 or 4,162)
2. 16.9 + 2.185 = **19.085** ([19.085] or 18.192 or 18.085 or 17.084)
3. 12.4 L = **12,400** mL ([12,400] or 1,240 or 0.124 or 0.0124)
4. The number whose all prime factors are 3 , 3 and 5 is **45** (18 or 30 or [45] or 90)
5. 12.0189 $\simeq$ **12.019** (to the nearest Thousandth) (12.089 or 12.018 or [12.019] or 10.000)
6. The value of digit 6 in 2.326 is **0.006** ([0.006] or 0.600 or 0.6 or 6)
7. Which is the greatest number 12.8 , 12.75 , 12.452 or 12.78? ([12.8] or 12.75 or 12.452 or 12.78)

Second: Complete the following:

1. The prime factors of 35 are **5 and 7**.
2. 40 x **1,000** = 40,000
3. The common multiple of all numbers is **0**.
4. 36.479 $\simeq$ 36.5 (rounded to the nearest **tenths**)
5. The rule of the pattern 2 , 6 , 18 , 54 is **n X 3**.
6. (40 X 30) + (40 X 8) + (7 X 30) + (7 X 8) = **47** X **38**
7. The equation that represents the opposite bar model is **3.5 = w + 2.8**

3.5	
W	2.8

8. 4,500 ÷ 9 = **500**

Third: Choose the correct answer:

1. $2.3 \times 0.2 =$ ...0.46... . (0.34 or **[0.46]** or 0.046 or 0.043)
2. 225 cm = ...2.25... meter (2250 or 22.5 or 0.225 or **[2.25]**)
3. Multiply 5 by the sum of 2.1 and 6 is written as ...5 X (2.1 + 6)

   (5 X 2.1+ 6 or (5 X 2.1) + 6 or 5 + (2.1 X 6) or **[5 X (2.1 + 6)]**)
4. 0.300 = ...3 tenths... . (**[3 tenths]** or $\frac{300}{100}$ or $\frac{30}{10}$ or $\frac{3}{100}$)
5. $157 \times 0.1 =$ ...15.7... . (**[15.7]** or 157 or 1.57 or 0.157)
6. The value of the expression 22 + 33 - (3 + 8) is ...44... (5 or 13 or 25 or **[44]**)
7. Which of the following numbers is a common multiple of both 3 and 5?

   (50 or 40 or **[90]** or 25)

Fourth: Answer the following:

1. Solve the equation K + 2.4 = 7.8

   k = 7.8 – 2.4 = 5.4
2. A factory produces 320 toys each month. What is the number of toys that must be produced at 12 months?

   The number of toys = 320 X 12 = 3,840 toys
3. Find the GCF and LCM of 36 and 24

   36 = 2 X 2 X 3 X 3

   24 = 2 X 2 X 3 X 2

   GCF = 2 X 2 X 3 = 12

   LCM = 2 X 2 X 3 X 3 X 2 = 72
4. If the price of 14 books is 490 pounds, find the price of each book.

   The price of each book = 490 ÷ 14 = 35 pounds

Alexandaria Governorate - West Educational Zone



First: Choose the correct answer:

1. The place value of the digit 8 in 6.285 is **hundredths**
   (Tenths or 0.08 or Hundredths or 0.8)
2. 49 x 912 is closer to ......**45,000**..... (4.500 or 45,000 or 40,000 or 4.00)
3. 7.54 < ....**7.6**......... (7.145 or 7.216 or 7.6 or 7.399)
4. 8 and 9 thousandths = ...**8.009**....... (8.009 or 89,000 or 8.09 or 8.909)
5. 23.86 ÷ 10 = ...**2.369**....... (23.86 or 2.369 or 238.6 or 2386)
6. 3.269 ≃ ....**3.27**........ (to the nearest Hundredth)
   (3.3 or 3.26 or 3.27 or 3.269)
7. 42.59 x 100 = ...**4,259**....... (425.9 or 4 .259 or 4,259 or 42,590)

Second: Complete the following:

1. 30 + 6 + 0.4 + 0.007 = ...**36.407**..... (In standard form)
2. ....**1**............ is the common factor of all numbers.
3. In the opposite bar model x = ...**30**............

x	
24.8	5.2

4. The smallest prime number is ....**2**..........
5. 9 Hundredths - 15 Thousandths = ...**75**......... Thousandths
6. The opposite area model represent ....**30.4**........ x ....**8.2**..........

	8	0.2
30	240	6
0.4	3.2	0.8

7. 2.45 ÷ 1.5 = ...**24.5**........ ÷ 15
8. The number whose prime factors are 2 , 2 , 3 , 5 is ....**60**..........

Third: Choose the correct answer:

1. Which of the following is an expression?

   ($x + 0.8 - 1.6$ or $3.25 + y = 5.55$ or $2.36 - 1.5 = m$ or Twice the num.)

2. If $34 \div 8 = 4$ R2, then the dividend is ......34...... (2 or 8 or 4 or 34)

3. The solution of the equation $m - 5.9 = 4.1$ is m = ...10......

   (9.10 or 10 or 1.8 or 6.13)

4. The LCM of 5 and 10 is ......10...... (5 or 10 or 15 or 25)

5. 27 x ......96...... = [7 X 90] + [7 X 6] + [20 X 90] + [20 X 6]

   (69 or 79 or 96 or 97)

6. The first operation to calculate $50 - 8 + 1.2 \times 10 \div 0.1$ is multiplication

   (addition or subtraction or multiplication or division)

7. The rule of the pattern: 3 , 7 , 11 , 15 is ......n + 4......

   (n - 4 or n + 4 or n X 4 or n ÷ 4)

Fourth: Answer the following:

1. Find the GCF and the LCM of 12 and 18.

   12 = 2 X 2 X 3

   18 = 2 X 3 X 3

   GCF = 2 X 3 = 6

   LCM = 2 X 2 X 3 X 3 = 36

2. Ahmed bought 9 pens of the same type. If the price of one pen is 13.85 pounds, how much will Ahmed pay?

   Ahmed paid = 13.85 X 9 = 124.65 pounds

3 Use the order of operations to find the value of

$$13.5 + 0.25 \div 0.1 - (12.8 \times 0.1)$$

$13.5 + 0.25 \div 0.1 - (12.8 \times 0.1)$

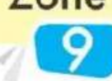
$= 13.5 + 2.5 - 1.28 = 16 - 1.28 = 14.72$

4 Use the opposite table to discover the rule, then find the missing numbers in the table.

The rule is: n + 1.5

Input	Output
6	7.5
10	11.5
14	15.5
8.5	10
12.25	13.75
16	17.5

El-Behera Governorate - Damanhour Educational Zone



First: Choose the correct answer:

1 25.3 X 0.1 = 2.53 . (253 or 2.53 or 25.3 or 2,530)

2 The GCF of 9 and 6 is 3 . (2 or 3 or 6 or 4)

3 The common factor of all numbers is 1 . (1 or 2 or 3 or 4)

4 The place value of 7 in 8.07 is hundredths

(Ones or Tenths or Hundredths or Thousandths)

5 The next number in (2, 5, 8, ..., is 11 . (10 or 11 or 12 or 13)

6 13.69 14 (to the nearest whole number) (69 or 14 or 13 or 70)

7 8.5 X 1.4 = 85 X 0.14 (< or > or = or other wise remaining)

Second: Complete the following:

1. The rule of the pattern 0 , 3 , 6 , 9 , is ...n + 3...
2. In the opposite area model, the value of x = ...120...

	20	4
30	600	X
2	40	8

3. 4 + 2 X 3 = ...10...
4. 700 m = ...0.7... Km
5. 3.58 + K = 4.69, then K = ...1.11...
6. If 42 X 51 = 2,142, then 4.2 X 0.51 = ...2.142...
7. 3 hundredths x 3 = 9 hundredths
8. 75.41 X 0.01 = ...0.7541...

Third: Choose the correct answer:

1. 15.3 X 0.1 = ...1.53... (1.54 or 1.53 or 1.5 or 1.548)
2. The quotient in the equation 155 ÷ 5 = 31 is ...31... (155 or 31 or 5 or 1)
3. The common factor of all numbers is ...1... (1 or 2 or 3 or 4)
4. 0 X 658 = ...0... (658 or 0 or 1 or 6580)
5. Subtract 7.4 from 8.6 written ...8.6 – 7.4...
(7.4 - 8.6 or 8.6 - 7.4 or 8.6 X 7.4 or 8.6 ÷ 7.4)
6. If 35 X 121 = 4,235 then 4,235 ÷ 121 = ...35... (121 or 35 or 4235 or 35R2)
7. The value of the digit 3 in 5.35 is ...0.3... (3 or 0.3 or 0.03 or 30)

Fourth: Answer the following:

1. Find the result:

A 4,864 ÷ 32

B 321 X 15

a) 4,864 ÷ 32 = 152 b) 321 X 15 = 4,815

2. Use the order of operation to evaluate 5.5 ÷ 5 x 10 - 10

5.5 ÷ 5 X 10 – 10 = 1.1 X 10 – 10 = 11 – 10 = 1

3 Find the GCF of 20 and 35

20 = 2 X 2 X 5

35 = 5 X 7

GCF = 5

LCM = 2 X 2 X 5 X 7 = 140

4 Ola saved 17.25 pounds and her brother Hossam saved 8.5 pounds. Find the sum they saved.

The sum = 17.25 + 8.5 = 25.75 pounds

Qalyubiyya Governorate - Banha Educational Zone



First: **Choose the correct answer:**

1 0.008 + 0.07 +20 = 20.078 (20.807 or 20.78 or 20.708 or 20.078)

2 0.2 X 0.4 = 0.08 (8 or 0.8 or 0.08 or 0.008)

3 The value of the digit 4 in 3.514 is 0.004.

(Ones or Thousandths or 4 or 0.004)

4 The rule of the pattern 3 , 5 , 7 , ... , is 2 + n.

(2 + n or 3 + n or (n X 2) +1 or (2 X n) -1)

5 5.6 Km = 5,600 m (56 or 0.056 or 56,000 or 5,600)

6 14.6 ÷ 0.1 = 146 (10 or 100 or 0.01 or 0.1)

7 3 + 0.7 [=] 3.70 (< or > or = or ≤)

Second: **Complete the following:**

1 3.215 + 3.13 = 6.345

2 5.36 X 0.01 = 0.0536

3 The number whose prime factors are 2, 3 and 5 is 30.

4 The GCF of 14 and 35 is 7.

5 Seventeen and seven tenths = ...10.... + ...7.... + ...0.7....

6 785 cm = ...7.85.... m

7 35.469 ≈ ....35.47.... to the nearest Hundredths

8 The quotient of 84.24 ÷ 2 = ...42.12....

Third: Choose the correct answer:

1 6.500 = ...1.... X 6.5 (1 or 10 or 100 or 1,000)

2 Two hundred and five thousandths = ..200.005..

(0.502 or 5.200 or 200.005 or 0.25)

3 0.2 - 0.05 = ...0.15.... (0.3 or 0.03 or 0.15 or 0.25)

4 (17 X 4) + (17 X 40) + (17 X 400) = 444 X 17..

(444 X 17 or 666 X 51 or 660 X 17 or 45)

5 The LCM for 2 and 3 is ....6.... (2 or 3 or 5 or 6)

6 The value of the variable K in the equation: K - 2.5 = 4 is ....6.5.....

(3.5 or 2.5 or 4 or 6.5)

7 The place value of the underlined digit 8.<u>7</u>34 is Tenths.

(Tenths or Zero or Hundredths or Ones)

Fourth: **Answer the following:**

1 Lara bought 5 pens, if the price of each pen is 3.81 pounds. How much is the total cost?

The total cost = 5 X 3.81 = 19.05 pounds

2 Use the ordering of operations to solve: (45.2 - 14) ÷ 0.1 + 32.2

(45.2 – 14) ÷ 0.1 + 32.2

= 31.2 ÷ 0.1 + 32.2 = 312 + 32.2 = 344.2

3 A rope that is 8.7 meters long is being cut into 3 equal pieces. How long is each piece?

The length of each piece = 8.7 ÷ 3 = 2.9 meters

4 Find the result: 75 x 32 (Show your steps)

75 X 32 = (70 X 30) + (70 X 2) + (5 X 30) + (5 X 2) = 2,100 + 140 + 150 + 10

= 2,400

Damietta Governorate - Ras El Bar Educational Zone



First: Choose the correct answer:

1. 54.318 X 100 = **5,431.8** (54.318 or 543.11 or **5,431.8** or 54,318)
2. In the number 162.513, which digit in the Hundredths place? (**1** or 6 or 5 or 3)
3. 5.64 X 5 [<] 56.4 X 8 (**<** or > or = or ≥)
4. 250 + 0.2 + 0.05 = **250.25** (25.25 or **250.25** or 250.205 or 25.205)
5. The prime factors of 15 are **3 and 5**. (1 and 3 or **3 and 5** or 5 and 15 or 1 and 15)
6. 5 Liters = **5,000** mL (500 or 50 or **5,000** or 0.5)
7. The LCM of 5 and 10 is **10**. (5 or 50 or **10** or 500)

Second: Complete the following:

1. 23 , 27 , 31, **35**. (in the same pattern)
2. The operation in the opposite area model is **3.2** X **2.2**

	3	0.2
2	6	0.4
0.2	0.6	0.04

3. The number whose all prime factors are 2 , 2 and 5 is **20**.
4. **1,000** X 15 = 15,000
5. **2** is the only even prime number.
6. 0 ÷ 32,562 = **0**
7. 2 + (2 X 5) = **12**
8. Three and twenty-five thousandths = **3.025**

Third: Choose the correct answer:

1. $2.6 \div 2 =$ ...1.3... (1.2 or 1.3 or 1.4 or 0.13)
2. 75 X 43 = [70 X 40] + [70 X 3] + [5 X 40] + [5 X ...3...] (70 or 40 or 5 or 3)
3. If $21 \div 5 = 4$ R 1, then the divisor is ...5... (21 or 4 or 5 or 1)
4. 0.4 X 0.6 = ...0.24... (24 or 2.4 or 0.24 or 0.024)
5. If 23.2 - y = 12, then y = ...11.2... (23.2 or 1.1 or 11.2 or 1.21)
6. Rounding the number 2.153 to the nearest Tenth is ...2.2...

   (2.1 or 2.15 or 2.14 or 2.2)
7. The number 11 has ...2... factors. (1 or 2 or 3 or 4)

Fourth: Answer the following:

1. If 120 pens are pocked, each 12 to a bag, then how many bags will be there?

   The number of bags = $120 \div 12 = 10$ pens

2. Find the greatest common factor (GCF) for 12 and 8.

   12 = 2 X 2 X 3

   8 = 2 X 2 X 2

   GCF = 2 X 2 = 4

   LCM = 2 X 2 X 3 X 2 = 24

3. Use the mathematical order of operations to evaluate the following expression. $3.3 \div 3$ X 10 - 10

   $3.3 \div 3$ X 10 – 10 = 1.1 X 10 – 10 = 11 – 10 = 1

4. Mona had 78.4 LE, she spent 52.74 LE. Find the remainder.

   The remainder = 78.4 – 52.74 = 25.66 L.E

Assiut Governorate - Assiut Educational Zone

12

First: Choose the correct answer:

1. The value of the digit 5 in 6.325 is ..0.005.. (5 or 0.5 or 0.05 or **0.005**)
2. 10 is a multiple of ....5.... (7 or 6 or **5** or 4)
3. 30 + 4 + 0.5 [=] 34.500 (> or < or **=**)
4. Which of the following is an equation?

   (5 - y or 3.2+ 1.6 or **x +2.5 = 7** or 4 + 3m)
5. 2,525 ÷ 25 = ...101.... (11 or **101** or 111 or 25)
6. 25 X 43 = (20 X 40) + (20 X 3) + (5 X 40) + (5 X ..3..) (40 or 30 or 20 or **3**)
7. 700 g = ...0.7.... kg (7000 or 70 or 7 or **0.7**)

Second: Complete the following:

1. Using the bar model

X	
2.3	5.4

   the value of X is ..2.3 + 5.4 = 7.7
2. The smallest prime number is ....2....
3. 10,000 X ....8.... = 80,000
4. The common factor of all numbers is ....1....
5. 5 hundredths - 24 thousandths = ...26.... thousandths
6. 10 + 3.5 ÷ 0.1 = ...45....
7. 2400 ÷ 80 = ...30....
8. 7.457 ≈ ....7.46.... to the nearest Hundredth

Third: Choose the correct answer:

1. The divisor in 675 ÷ 24 = 28 R 3 is ....24.... (675 or **24** or 28 or 3)
2. 0.1 X 0.1 = ...0.01.... (0.03 or 0.02 or **0.01** or 0.1)
3. If 6,726 ÷ 19 = 354, then 354 X 19 = ..6,726..

   (6,267 or **6,726** or 6,727 or 6,628)

4 Subtract 3.1 from 4.62. then multiply the result by 2, then the expression is (4.62 – 3.1) X 2 (4.62 - 3.1 X 2 or (4.62-3.1) X 2 or 3.1 X 2 or 4.62 X 2)

5 4.45 - 4.32 < 1.01 + 0.3 (< or > or = or ≤)

6 In the opposite area model, X + y = 6.15 (6 or 0.15 or 6.15 or 15.6)

	2	0.3
3	X	0.9
0.5	1	y

7 The rule of the pattern 3 , 5 , 7 , 9 , ... is n + 2. (n - 2 or n + 2 or n X 2 or n ÷ 2)

Fourth: Answer the following:

1 Rashad and his father went on a fishing trip to Lake Nasser. They each caught a huge fundu catfish. The first one weighed 53.25 kg. The smaller one weighed 46.7 kg. How much did the fish weigh in all?

The weight of all fish = 53.25 + 46.7 = 99.95 kg

2 Find the GCF and LCM for 10 and 12

10 = 2 X 5

12 = 2 X 2 X 3

GCF = 2 LCM = 2 X 2 X 3 X 5 = 60

3 The city council planted trees on the side of a 1,050-meter road. If 75 trees are planted at equal distances, what is the distance between each tree?

The distance = 1,050 ÷ 75 = 14 meters

4 Determine the values of the missing digits and then find the final product.

		(4)	
		(4)	
		6	7
X		7	6
	4	0	2
+ 4	6	9	0
5	0	9	2

El Gharbia Governorate - East Educational Zone



First: Choose the correct answer:

1. The value of the digit 4 in 3.514 is 0.004.
   (40,000 or 400 or 0.4 or **0.004**)

2. Which of the following is an expression?
   (2.5 + x = 8 or 2.5 + 1.4 = 1.6 + 1.3 or Ramy saved 18 LE per day or **x + 2.7 – 3.8**)

3. 3 , 5 , 7 , 9 , 11 , 13 in the same pattern. (21 or 15 or **13** or 12)

4. 1 is a common factor for all numbers. (0 or **1** or 2 or 3)

5. 9.782 ≈ 9.8 (to the nearest Tenth) (10 or **9.8** or 9.88 or 9.7)

6. 30 + 0.04 + 0.005 = 30.045 (**30.045** or 30.45 or 30.405 or 30.504)

7. 7.14 X 0.1 = 0.714 (**0.714** or 71.4 or 7.140 or 714)

Second: Complete the following:

1. 2 Hundredths - 2 Thousandths = 18 Thousandths
2. The number which has 2 , 2 , 3 , 5 as prime factors is 60.
3. 2.5 liters = 2,500 milliliters
4. The greatest common factor GCF of 5 and 10 is 5.
5. The product of : 0.3 x 0.4 is equal to 0.12.
6. The sum of 2.05 + 4.127 = 6.177
7. Quotient x divisor + remainder = Dividend
8. Sixty-four and sixty-four thousandths in standard form is 64.064

Third: **Choose the correct answer:**

1. $[3 \times 61] + [5 \times 61] =$ ......8...... $\times 61$ (5 or 7 or 8 or 15)
2. 0.3 [>] 3 Thousandths (< or > or =)
3. ...35... is one of the multiples of number 5. (38 or 53 or 35 or 6)
4. If the input is 45, and the rule is "n ÷ 5", then the output is ......9...... (6 or 40 or 9 or 50)
5. 253 ÷ 1,000 = ...0.253... (2.53 or 0.235 or 0.253 or 2,530)
6. The value of x in the equation x - 5.3 = 6 is ......11.3...... (11.3 or 0.7 or 30 or 8.62)
7. All the following are prime numbers, except ......6...... (5 or 7 or 3 or 6)

Fourth: **Answer the following:**

1. Use the mathematical order of operations to evaluate: 12 + (9 - 2) x 5

   12 + (9 – 2) X 5 = 12 + 7 X 5 = 12 + 35 = 47

2. Find the least common multiple LCM of 4 and 6

   4 = 2 X 2

   6 = 2 X 3

   LCM = 2 X 2 X 3 = 12

3. Farida saved 17.25 pounds and her brother Murad saved 8.5 pounds. Find the sum they saved

   They saved = 17.25 + 8.5 = 25.75 pounds

4. Find the result [Show your steps): 1,477 ÷ 12 = ...123... remainder ...1...

   1,447 ÷ 12 = 123 R 1

Kafr El Shiekh Governorate - East Educational Zone

14

First: Choose the correct answer:

1. Using the opposite bar model: x = ...0.36......

3.16	
x	2.8

(2.8 or 1.8 or 1.64 or 0.36)

2. The value of the digit 2 in 34.527 is ......0.02......

(2 or 20 or 0.2 or 0.02)

3. 4150 ÷ 29 = 143 R ......3...... (1 or 2 or 3 or 4)

4. 24 X 15 = ...36...... Tens (360 or 36 or 3.6 or 3600)

5. The rule of the opposite pattern is ...n X 8...

(n + 8 or n X 8 or n X 3 or n + 7)

Input	1	2	3	4
Output	8	16	24	32

6. If 58 X 47 = 2726 , then 5.8 X 0.47 = ...2.726......

(2.726 or 272.6 or 0.2726 or 27.26)

7. 1,212 ÷ 12 = ...101...... (11 or 12 or 101 or 1001)

Second: Complete the following:

1. If 3.23+ P = 10.24 then P = ...7.01......
2. 2,207 ÷ 7 = ...315...... R ......2......
3. 12 + 24 ÷ 4 - 8 = ...10......
4. Rounding the number 56.284 to the nearest Tenth is ......56.3......
5. 24 X 37 = (20 X 30) + (...20... X ...7...) + (...4... X ...30...) + (4 X 7)
6. 2,400 ÷ 80 = ...30......
7. The factor of all numbers is ......1......
8. ......6.512...... X 0.1 = 0.6512

Third: Choose the correct answer:

1. Which of the following is an equation?

(25.6 - 9 or 9 - x = 3.5 or 7.5 + 3.65 or 3.6 + 1.6)

2. 0.7 X 0.6 = 0.42 (0.76 or 4.2 or 0.42 or 7.6)

3. 5 Hundredths - 24 Thousandths = 0.026 (26 or 0.026 or 0.029 or 29)

4. 25 X 0.001 = 0.025 (25 or 2.5 or 0.25 or 0.025)

5. In the opposite area model, the quotient 116

(31 or 26 or 116 or 3622)

	100	10	6
	3622	522	212
31	− 3100	− 310	− 186
	522	212	26

6. 1 + 0.5 + 0.05 = 1.55 (15.5 or 1.55 or 55.1 or 1.51)

7. 700 grams = 0.7 kilograms (0.7 or 7 or 70 or 7000)

Fourth: Answer the following:

1. Find the LCM of 10 and 12

10 = 2 X 5

12 = 2 X 2 X 3

LCM 2 X 5 X 2 X 3 = 60

2. Using the following area mode, find 45 x 137

45 X 137 = 4,000 + 1,200 + 280 + 500 + 150 + 35 = 6,165

	100	30	7
40	4,000	1,200	280
5	500	150	35

3. Rashad and his father went on a fishing trip. They each caught a huge fish. The first one weighed 53.25 kilograms, and the smaller one weighed 46.8 kilograms. How much did the fish weigh all together?

The weight of all fish = 53.25 + 46.8 = 100.05 kg

4 Using the opposite figure, find:

3,872 ÷ 11 = 352

	3 5 2
11	3 8 7 2
	3 3
	5 7
	5 5
	2 2
	2 2
	0 0

Dakahlia Governorate - East Educational Zone 15

First: Choose the correct answer:

1 Three and four-tenths = 3.4 (34 or 340 or 3.4 or 3.04)

2 18 is a multiple of 9. (3 or 15 or 18 or 21)

3 79.431 ≃ 79.43 to the nearest Hundredth

(79.4 or 79.43 or 79.44 or 79.441)

4 The value of Y in the equation: 6.8 = 1.2 + Y is 5.6 (8 or 5.6 or 5 or 6.5)

5 8.3 X 100 = 830 (0.83 or 8.03 or 830 or 8300)

6 6 + 18 ÷ 3 - 1 = 11 (7 or 8 or 11 or 15)

7 The quotient of : 4,200 ÷ 7 = 600 (6 or 60 or 600 or 0.06)

Second: Complete the following:

1 6.3 ÷ 0.7 = 9

2 489.51 = 489 + 0.51

3 The product of: 18.2 X 0.1 = 1.82

4 The LCM for 5 and 4 is 20.

5 The quotient of 621.5 ÷ 10 = 62.15

6 If K - 15.76 = 3.24 , then the value of K = ...**19**..........

7 The value of the digit 9 in 2.639 is ....**0.009**....

8 The greatest common factor (GCF) for 8 and 16 is ....**8**........

Third: Choose the correct answer:

1 ....**0**........ is a common multiple for all numbers. (0 or 1 or 2 or 3)

2 The rule of the pattern : 3 , 5 , 7 , 9 , is ....**n + 2**........

(n + 2 or n + 3 or 2n - 3 or 2n - 1)

3 The place value of digit 5 in 13.507 is ....**tenths**....

(500 or 0.05 or Hundredths or Tenths)

4 (25 X 2) + (25 X 7) = 25 X ....**9**.......... (9 or 27 or 72 or 14)

5 6.7 liter = ...**6,700**..... ml (0.067 or 67 or 670 or 6,700)

6 6.25 X 0.1 ....**<**........ 6.25 ÷ 0.1 (> or < or = or otherwise)

7 50 + 0.4 + 0.007 = ...**50.407**..... (50.047 or 50.704 or 50.407 or 50.74)

Fourth: Answer the following:

1 Using the opposite model: Find the value of variable D

6.6	
5.3	D

D = 6.6 – 5.3 = 1.3

2 Rahma saved 17.25 pounds and her sister Salwa saved 8.5 pounds. Find the sum they have saved.

The sum of money = 17.25 + 8.5 = 25.75 pounds

3 Calculate the product of : 2.5 X 2.3

2.5 X 2.3 = 5.75

4 A teacher wants to distribute 240 prizes equally among 6 classes: How many prizes does each class get?

Each class gets = 240 ÷ 6 = 40 prizes

Qena Governorate - Nagaa Hamady Educational Zone



First: Choose the correct answer:

1. The place value of the digit 2 in 3.127 is **hundredths**
   (Ones or Hundred or Tenths or Hundredths)
2. The divisor in the equation 1.8 ÷ 6 = 0.3 is ...... **6** ......
   (0.3 or 1.8 or 6 or 0.6)
3. 3.33 ÷ 0.1 = ... **33.3** ...... (33.3 or 3.33 or 0.333 or 0.33)
4. 0.9 is closer to ...... **1** ...... (0.5 or 0.6 or 1 or 0.25)
5. 10 is a multiple of ...... **5** ...... (3 or 4 or 5 or 6)
6. 1,500 ÷ 50 = ... **30** ...... (3 or 30 or 300 or 3,000)
7. The common multiple of all numbers is ...... **0** ...... (1 or 2 or 0 or 3)

Second: Complete the following:

1. The smallest odd prime number is ...... **3** ......
2. 0.08 kg = ... **80** ...... gm
3. 31 Hundredths + 2 Tenths = ... **0.51** ......
4. The quotient of 1,919 ÷ 19 = ... **101** ......
5. Thirty-seven and five tenths are written as ...... **37.5** ......
6. 28 days = ... **4** ...... week(s)
7. The LCM of 6 and 9 is ...... **18** ......
8. 91.364 ≃ ...... **91.36** ...... (to the nearest Hundredth)

Third: Choose the correct answer:

1. $30 + 0.5 + 0.01 =$ ......30.51...... . (35.1 or **30.51** or 0.35 or 0.35)
2. $25 \times 4 \div (6 - 5)$ ......100...... . (**100** or 101 or 0.01 or 165)
3. If $8.23 + P = 10.24$, then $P =$ ......2.01...... . (18.47 or 2.47 or **2.01** or 2.41)
4. The quotient of $2.4 \div 0.4 =$ ......6...... . (**6** or 11 or 0.6 or 1.6)
5. Estimate the product of 971×23 is ......20,000...... . (**20,000** or 8,000 or 2,000 or 20)
6. All the following are prime numbers, except ......6...... . (5 or 7 or 3 or **6**)
7. 98.013 ......<...... 98.101 (= or **<** or > or ⩽)

Fourth: Answer the following:

1. Arrange from the least to the greatest (0.58 , 8.05 , 8.5 , 8.005)

   The order : 0.58 , 8.005 , 8.05 , 8.5

2. Find the product of 32×12

   $32 \times 12 = 384$

3. Find the GCF of 10 and 15

   $10 =$ ......2×5......

   $15 =$ ......5×3......

   GCF = ...5......

   LCM = ...$2 \times 5 \times 3 = 30$......

4. Mona bought 3.75 kg of flour, and she bought another 2.25 kg of it. How much flour did she have?

   The flour that Mona had = 3.75 + 2.25 = 6 kg

Marsa Matruh Governorate - El Alamein Educational Zone



First: Choose the correct answer:

1. The standard form of 0.004+ 0.8+ 20+ 300 is **320.804**.
   (302.804 or 320.804 or 320.840 or 32.408)
2. 166.8 + 12.52 = **179.32**. (179.20 or 178.60 or 179.32 or 178.32)
3. 800 mL = **0.8** L (80,000 or 8,000 or 0.8 or 0.08)
4. The number whose all factors are 1 , 2 , 4 and 8 is **8**.
   (64 or 24 or 8 or 16)
5. 39.018 ≃ **39.02**. (to the nearest Hundredth)
   (39.10 or 39 or 39.02 or 39.1)
6. The value of digit 2 in 75.462 is **0.002**. (2 or 0.2 or $\frac{2}{100}$ or 0.002)
7. Which is the greatest number 2.5 , 2.27 , 2.7 or 2.591?
   (2.5 or 2.27 or 2.7 or 2.591)

Second: Complete the following:

1. The prime factors of 15 are **3 and 5**.
2. The equation that represents the opposite bar model is **p + 7.5 = 10.1**

10.1	
7.5	P

3. 80 x **100** = 8,000
4. Zero is a common **multiple** of all numbers
5. 15.789 ≃ 15.8 (is rounded to the nearest **tenth**)
6. The missing number of the pattern 80 , 40 , 20 , ... , 5 is **10**.
7. 3,600 ÷ 4 = **900**
8. (30 X 8) + (30 X 20) + (9 X 8) + (9 X 20) = **39** x **28**.

Third: Choose the correct answer:

1. $2.4 \times 0.2 =$ ...... **0.48** .... (0.048 or [0.48] or 0.0048 or 48)
2. 6,500 cm = ... **65** ...... meter ([65] or 650 or 6.5 or 0.65)
3. Adding 13.5 and 2.5 then divide the sum by 4 is written as **(13.5 + 2.5) ÷ 4**

   (13.5 + 2.5 ÷ 4 or [[13.5 + 2.5] ÷ 4] or 13.5 + [2.5 ÷ 4] or 13.5 - [2.5 ÷ 4])
4. 0.02 = **20 thousandths** ($\frac{2}{10}$ or 2 thousandths or [20 thousandths] or $\frac{20}{100}$)
5. $0.24 \div 0.01 =$ ...... **24** .... (0.24 or [24] or 2.4 or 0.0024)
6. The value of the expression $30 - 25 \div (4 + 1)$ is **25** .... (1 or [25] or 5 or 10)
7. Which of the following numbers is a common multiple of both 2 and 3?

   (27 or 40 or [24] or 39)

Fourth: Answer the following:

1. Solve the equation $5.5 + K = 7.5$

   k = 7.5 – 5.5 = 2
2. Ramy saved 225 pounds, and Alaa saved 15 times as much as Ramy. How much money did Alaa save?

   Alaa saved = 15 X 225 = 3,375
3. Find the GCF of 28 and 42

   28 = **2 X 2 X 7**

   42 = **2 X 7 X 3**

   GCF = **2 X 7 = 14**

   LCM = **2 X 2 X 7 X 3 = 84**
4. A fast train covered a distance of 288 km in 12 minutes. Calculate the distance covered in one minute.

   The distance = 288 ÷ 12 = 24 km

Guide Answers Exercise Book

Theme 1

Unit 1

Concept 1

Lesson 1

1
- 1 → c
- 2 → a
- 3 → d
- 4 → b

2
- 1 0.5
- 2 0.03
- 3 0.16
- 4 0.029
- 5 5.03
- 6 56.17
- 7 115.76
- 8 3,300.3
- 9 3,026,075.172
- 10 15,700,005.17

3
- 1 Eight tenths
- 2 Twenty-three hundredths
- 3 Three hundred sixteen thousandths
- 4 Fifteen and three tenth
- 5 Five thousand, three hundred twenty-eight and ninety-six hundredths.
- 6 Thirteen and six hundred twenty-nine thousandths
- 7 Three million, one hundred twenty thousand and three hundredths

4
- 1 359,040,006.79
- 2 6,000,070,096.005
- 3 Nine milliard, two hundred million, sixty-five and twenty-seven thousandths
- 4 Two hundred five thousand, nine and four hundredths
- 5 Tenths, 0.6
- 6 0, 0
- 7 0.09
- 8 Tenths
- 9 3, 2, 5
- 10 0.709

5
- 1 7,000,050.000.07
- 2 Fifty-six million, five hundred and thirty-five thousandths
- 3 Hundred Thousands
- 4 0
- 5 Tenths
- 6 0.003
- 7 4.45
- 8 $2\frac{53}{1,000}$
- 9 3
- 10 0.060
- 11 0.609

Assessment 1 on Lesson 1

First

- 1 9,000,090,000.009
- 2 Six thousand, two hundred and nine hundredths
- 3 Ten Thousands
- 4 30.3
- 5 0

Second

- 1 a 400,030,000.03
- 2 b Three million, three and three thousandths
- 3 c 40.056
- 4 c 8

Third

- 1 → c
- 2 → a
- 3 → b
- 4 → e
- 5 → d

Lessons 2&3

1
- 1 45.2
- 2 4,562.58
- 3 5.628
- 4 25.39
- 5 983.2

2
- 1 92.5
- 2 0.857
- 3 increased
- 4 0.025
- 5 248
- 6 decreased
- 7 89.3
- 8 0.638
- 9 27
- 10 4,583.6
- 11 2.5
- 12 3,500.876
- 13 25.025
- 14 235.48
- 15 63.025
- 16 0.043
- 17 0.36
- 18 90 + 5 + 0.9 + 0.005
- 19 8 , 5 , 3 , 6
- 20 50.05

3
- 1 2.526
- 2 0.26
- 3 25.8
- 4 450
- 5 0.805
- 6 increases
- 7 right
- 8 23.023
- 9 824 + 0.12
- 10 increases from 0.7 to 7

4
- 1 → b
- 2 → c
- 3 → d
- 4 → a

5
- 1 5 , increased , 0.5 , 5
- 2 7 , increased , 0.07 , 0.7
- 3 8 , increased , 0.008 , 0.08
- 4 0.578 , increased , 0.578, 5.78, 0.578 X 10 = 5.78

Assessment 2 on Lessons 2&3

First

1 452.6 — 2 752.8 — 3 450.204
4 20 + 0.05 — 5 8.5

Second

1 3.927 — 2 27 — 3 0.012
4 523.876 — 5 459

Third

1 → c — 2 → a — 3 → b
4 → e — 5 → d

Lessons 4&5

1
1 > — 2 < — 3 =
4 > — 5 < — 6 <
7 > — 8 > — 9 <
10 = — 11 < — 12 >
13 < — 14 = — 15 >

2
1 270.3 — 2 560.38
3 180.60 — 4 900.900

3
1 100.50 — 2 90.025
3 100.002 — 4 8.237

4
1 a 5 — b 69 — c 1 — d 100
2 a 4.6 — b 110 — c 0 — d 56.9
3 a 1.26 — b 63.83 — c 1 — d 2.00
4 a 45.369 — b 0.326 — c 1

5
1 a 5 — b 9 — c 0 — d 1 — e 13 — f 70 — g 101 — h 1000 — i 53
2 a 23.5 — b 4.3 — c 1.0 — d 18.3 — e 1.3 — f 3.7 — g 200.0 — h 60.0 — i 0
3 a 7.26 — b 69.36 — c 0.29 — d 0.98 — e 0.13 — f 75.08 — g 4.01 — h 10.00 — i 20.00
4 a 25.370 — b 2,258.365 — c 100.003 — d 3.022 — e 0.026 — f 10

6
1 237 — 2 0.3 — 3 45.27
4 5.242 — 5 Tenth
6 Hundredth — 7 whole number
8 562.8 ≈ 563 — 9 5.6234 ≈ 5.62 — 10 5.72

7
1 56.8 — 2 98.205 — 3 >
4 > — 5 56.02 — 6 2.456
7 69.45 — 8 0.01 — 9 10
10 56.03

8
1 56.025 < 56.052 < 56.25 < 56.502 < 56.52
2 60.05 > 50.06 > 6.005 > 5.060 > 5.006

Assessment 3 on Lessons 4&5

First

1 a < — 2 d 75.34 — 3 b 78
4 c Hundredth — 5 b 20.024

Second

1 458.03 — 2 458 — 3 458
4 460 — 5 500

Third

1 < — 2 > — 3 = — 4 < — 5 <

Fourth

1 65 — 2 81 — 3 2.88

Assessment on Concept 1

First

1 5,005,500,000.005 — 2 507.89
3 0.09 — 4 5,864.7 — 5 458.0

Second

1 d Eight hundred thousand and eight hundredths
2 c 752
3 a 4,040.44 — 4 c 75.599

Third

1 < — 2 < — 3 >
4 = — 5 <

Fourth

1 → b — 2 → a — 3 → d
4 → e — 5 → c

Fifth

147.72 ≈ 148 Kilometers

Concept 2

Lessons 6&7

1
1. ⓐ 56.4 + 25 = 81.4 ⓑ 6.4 + 15.3 = 21.7 ⓒ 74.82 + 26.17 = 101.0 ⓓ 8.3 + 1 = 9.3 ⓔ 63.3 + 7.8 = 71.1 ⓕ 96.4 + 69.5 = 165.9
2. ⓐ 1 + 0.5 = 1.5 ⓑ 26 + 3.5 = 29.5 ⓒ 7 + 3 = 10 ⓓ 1 + 2 = 3 ⓔ 4.5 + 9 = 13.5 ⓕ 6 + 4.5 = 10.5

2
1. 0.68 2. 0.64 3. 0.60 4. 1.43 5. 1.63

3
1. 479.278 2. 70,479.25 3. 1,889.556 4. 96,634.385 5. 69,282.278

4
1. 64.038 2. 1,219.528 3. 212.000 4. 12.939 5. 56,302.707 6. 8,056.559 7. 284.92 8. 56,963.45

5
1. 0.43 + 0.32 = 0.75
2. 0.70 + 0.24 = 0.94
3. 0.28 + 0.48 = 0.76
4. 0.46 + 0.54 = 1
5. 0.78 + 0.66 = 1.44
6. 1.24 + 0.54 = 1.78

6
1. 15 2. 60 3. 721 4. 118 5. 430

7
1. 1 2. 0 3. 1.5 4. 114 5. 12 6. 52 7. 6 8. 12.43 9. 0.55 10. 1.3

8
1. Second model 2. First model 3. 0.58 + 0.25 4. 0.9 + 0.48 5. 0.5 6. 2 7. 6.11 8. 403 9. 0.1 10. 0.744

9
1. 34.99 + 4.01 = 39.00 < 40
   No, Malak didn't achieve her goal.
2. Total = 953.5 + 240.6 = 1,194.1 kg
3. 4 + 1 = 5 Yes, the fabric she has is enough.

Assessment 4 on Lessons 6&7

First
1. ⓐ 0.15 + 0.28 2. ⓑ 3. ⓓ 37.95 4. ⓑ 0.25 5. ⓑ 70.5

Second
1. 5 + 5 = 10 2. 9.4 3. 67 4. 455.582 5. 0.38

Third
1. → ⓒ 2. → ⓐ 3. → ⓑ 4. → ⓔ 5. → ⓓ

Lessons 8-11

1
1. 0.18 2. 0.41 3. 0.28 4. 0.68 5. 0.45

2
1. 405.22 2. 643.992 3. 35.389 4. 46.143 5. 360.44 6. 46,766.45

3
1. 60.81 2. 430.577 3. 644.463 4. 4.215 5. 844.25 6. 71.045
7. 39.56 – 24.36 =15.2
8. 20,976.55

4
1. 0.90 – 0.43 = 0.47 2. 0.54 – 0.30 = 0.24
3. 0.68 – 0.46 = 0.22 4. 0.71 – 0.22 = 0.49
5. 1.53 – 0.97 = 0.56 6. 1.04 – 0.9 = 0.95

5
1. ⓐ 75 – 27.2 = 47.8 ⓑ 9.2 – 5.2 = 4 ⓒ 25,152.2 – 105.5 = 25,046.7 ⓓ 45.3 – 7.4 = 37.9 ⓔ 56.3 – 9.8 = 46.5 ⓕ 765.3 – 7.6 = 757.7
2. ⓐ 1 – 0.5 = 0.5 ⓑ 25 – 3.5 = 21.5 ⓒ 9 – 2 = 7 ⓓ 2 – 0.5 = 1.5 ⓔ 7 – 0.5 = 6.5 ⓕ 15 – 8 = 7

6
1. 64 2. 35 3. 446 4. 103 5. 450 6. 476

7
1. 41 2. 91.3 3. 1.1 4. 2.5 5. 70 6. 66 7. 5 8. 906.81 9. 0.55 10. 48.23

8
1 First model 2 First model
3 0.83 – 0.4 4 1.72 – 1.17 5 72.84
6 20.2 7 71 8 285
9 3.98 10 0.786

9
1 7,520.25 + 5,640.5 = 13,160.75 pounds
15,000 – 13,160.75 = 1,839.25 pounds
2 675.5 – 239.47 = 436.03 km
3 0.5 + 0.7 = 1.2 L.
1.5 – 1.2 = 0.3 L.

Assessment 5 on Lessons 8–11

First

1 ⓐ 0.42 – 0.27 2 ⓐ
3 ⓐ 4.55 4 ⓒ 0.53 5 ⓓ 7.55

Second

1 2 2 11.2 3 85
4 30.621 5 1

Third

1 → ⓑ 2 → ⓐ 3 → ⓓ
4 → ⓔ 5 → ⓒ

Fourth

Sum = 29.28 + 29.255 + 35.17 = 93.705 cm
Difference = 35.17 – 29.255 = 5.915 cm

Assessment on Concept 2

First

1 6.2 2 94 3 45.25
4 16.776 5 495

Second

1 ⓐ 0.5 – 0.27 2 ⓓ 0.22 + 0.30 3 ⓐ 3
4 ⓓ 2 5 ⓑ 267

Third

ⓐ → 2 ⓑ → 1
ⓒ → 4 ⓓ → 3

Fourth

12.25 + 15.5 = 27.75 pounds
56.5 – 27.75 = 28.75 pounds

Unit 2

Concept 1

Lesson 1

1
1 mathematical expression
2 mathematical expression
3 other 4 equation
5 equation 6 other
7 other 8 12.5 + x = 15
9 a – 12 = 7.5 10 number of boys
11 the money with him now
12 the height of other plant
13 2.15 + 36.5 = y 14 perimeter
15 12.5 + 3.25 = b

2
1 **x** = 125 – 65.5 2 15 + 21 = **x**
3 **x** = 90 – 75 4 **x** = 145 + 20
5 107.5 + **x** = 255

3
1 → ⓓ 2 → ⓐ 3 → ⓑ
4 → ⓔ 5 → ⓒ

Assessment 1 on Lesson 1

First

1 ⓑ a mathematical expression.
2 ⓒ an equation
3 ⓐ the number of girls
4 ⓒ the difference between the heights of his colleagues
5 ⓓ m = 4.25 – 3.79

Second

1 → ⓑ 2 → ⓐ 3 → ⓔ
4 → ⓒ 5 → ⓓ

Lessons 2&3

1
1 2.79 2 15.41 3 4.25
4 11.88 5 3.9 6 3.957

7 38
8 1

2
1 10
2 14.8
3 59.46
4 16
5 39
6 60
7 6
8 15.5

3
1 45
2 60
3 27
4 5.83
5 17.5

4 Answer by yourself.

Assessment 2 on Lessons 2&3

First

1 d 11.55
2 c 6.875
3 c 7 – (2.5 + 3.4)
4 a 9.9

Second

1 6.5
2 2.093
3 6.525

Third

1 → a = 63.8 – 35.2   a = 28.6
2 → a = 24.8 + 35.2   a = 60
3 → a = 10 – 6.15   a = 3.85
4 → a = 45.16 – 13.48   a = 31.68

Assessment on Concept 1

First

1 c an equation
2 a 13.40
3 c the amount he spent
4 a m = 6.35 + 3.14

Second

1 0.5
2 1.68
3 2.51
4 f = 9.07 - 0.28 = 8.79

Third

1 ✗
2 ✓
3 ✗
4 ✗

Concept 2

Lesson 4

1
1 2 X 3
2 2 X 5
3 2 X 2 X 3
4 2 X 2 X 2 X 2
5 2 X 3 X 3
6 2 X 2 X 2 X 3
7 2 X 2 X 2 X 2 X 2
8 2 X 2 X 3 X 3

2
1 2
2 2
3 2
4 3
5 Prime number
6 11
7 2, 3, 5, 7
8 3
9 16
10 3, 7
11 0, 2, 4, 6, 8
12 18

3
1 1
2 59
3 30
4 has two factors only
5 prime
6 2 X 2 X 3
7 8

4
1 ✓
2 ✓
3 ✓
4 ✗
5 ✗
6 ✗
7 ✓
8 ✓
9 ✗

Assessment 3 on Lesson 4

First

1 c 5
2 a 2 X 2 X 3
3 c 11
4 b 14

Second

1 → c
2 → a
3 → b

Third

1 2
2 4
3 5X5
4 20

Fourth

1 45 = 3 X 3 X 5
2 32 = 2 X 2 X 2 X 2 X 2
3 60 = 2 X 2 X 3 X 5

Lesson 5

1
1. 4
2. 4
3. 9
4. 1
5. 8
6. 12
7. 15
8. 14
9. 8
10. 18

2
1. 16
2. 45
3. 17
4. 2 X 13
5. 1
6. 7
7. 11
8. 97

3
1. 2 X 7
2. 2 X 2 X 2 X 2
3. one
4. the smaller number
5. 14
6. 1
7. 12

Assessment 4 on Lesson 5

First

1. ⓑ 2,7
2. ⓒ 1
3. ⓐ 7
4. ⓓ 30

Second

1. 28
2. 1 , 23
3. 19
4. 1
5. 5

Third

1. 10
2. 12

Fourth

GCF = 4

Lessons 6&7

1
1. 6 , 12 , 21 , 30 , 42
2. 0 , 18 , 30 , 42 , 60
3. 10 , 40 , 50 , 100
4. 25 , 45 , 85 , 150 , 15
5. 14 , 35 , 49 , 63 , 77

2
1. ⓐ 0, 3, 6, 9, 12, 15, 18, 21, 24, 27
   ⓑ 0, 6, 12, 18, 24
   ⓒ 0, 6, 12, 18, 24
   ⓓ 6
2. ⓐ 0, 6, 12, 18, 24, 30, 36
   ⓑ 0, 4, 8, 12, 16, 20, 24
   ⓒ 0, 12, 24
   ⓓ 12
3. ⓐ 0, 8, 16, 24, 32
   ⓑ 0, 4, 8, 12, 16, 20, 24, 28, 32, 36
   ⓒ 0, 8, 16, 24, 32
   ⓓ 8
4. ⓐ 0, 6, 12, 18, 24
   ⓑ 0, 8, 16, 24, 32, 40, 48, 56
   ⓒ 0, 24
   ⓓ 24

3
1. GCF = 2, LCM = 24
2. GCF = 4, LCM = 48
3. GCF = 3, LCM = 30
4. GCF = 2, LCM = 40
5. GCF = 6, LCM = 36
6. GCF = 7, LCM = 42
7. GCF = 14, LCM = 28
8. GCF = 12, LCM = 72

4
1. 27
2. 7
3. 0
4. 18
5. 40
6. Composite number
7. factor
8. multiples
9. the product of the two numbers
10. the largest number

Assessment 5 on Lessons 6&7

First

1. ⓒ 16
2. ⓒ 8
3. ⓐ 0
4. ⓑ 8
5. ⓑ 15

Second

1. composite number
2. factor
3. multiples
4. One
5. prime

Third

1. GCF = 8, LCM = 16
2. GCF = 5, LCM = 60

Fourth

1. 0 , 8 , 16 , 24 , 32 , 40 , 48
2. 0 , 12 , 24 , 36 , 48
3. 0 , 24 , 48
4. LCM = 24

Lesson 8

1
1. GCF = 4, LCM = 24
2. GCF = 3, LCM = 18
3. GCF = 4, LCM = 80
4. GCF = 7, LCM = 42
5. GCF = 3, LCM = 30
6. GCF = 8, LCM = 48
7. GCF = 15, LCM = 90
8. GCF = 5 , LCM = 75

2
1. 12 days
2. 15 cm
3. 63 fruits
4. 6 o'clock
5. 9 bags, 2 kg of oranges, 3 kg of apples
6. 4 groups, 3 doctors, 7 nurses
7. 12 groups, 2 pens, 3 notebooks
8. 12 days

Assessment 6 on Lesson 8

First

1. c 6
2. b 24
3. c 12
4. d 18

Second

1. 24
2. 3 X 3 X 3
3. 6
4. 24

Third

1. LCM = 40 pencils
2. GCF = 6 bags

Assessment on Concept 2

First

1. a prime
2. a 20
3. d 36
4. c 6

Second

1. 1
2. 5
3. 0
4. 30
5. 40, 5, 8

Third

1. ✗
2. ✗
3. ✗
4. ✓
5. ✓

Fourth

GCF = 7 groups, 3 pens, 5 notebooks

Unit 3

Concept 1

Lesson 1

1
1. 120
2. 3,465
3. 5,052
4. 868
5. 414
6. 2,322
7. 4,284
8. 40,050
9. 16,191
10. 3,752
11. 3,900
12. 12,375

2
1. 5 X 86 = 430
2. 7 X 43 = 301
3. 8 X 207 = 1,656
4. 9 X 457 = 4,113
5. 83 X 25 = 2,075
6. 29 X 54 = 1,566
7. 47 X 520 = 24,440
8. 17 X 302 = 5,134
9. 25 X 359 = 8,975
10. 29 X 689 = 19,981
11. 47 X 927 = 43,569

3
1. 5 X 183
2. 4 X 807
3. 36 X 27
4. 19 X 375
5. First model
6. Third model
7. Third model
8. 23 X 32

4
1. 7 X 10 = 70 pounds
2. 5 X 100 = 500 pounds
3. 4 X 10,000 = 40,000 pounds
4. 8 X 200 = 1,600 balls

Assessment 1 on Lesson 1

First

1. a First model
2. c 75 X 408
3. c 24 X 32
4. a

Second

1. 40 X 23 = 920
2. 6 X 247 = 1,482
3. 33 X 45 = 1,485
4. 75 X 45 = 3,375

Third

5 X 1,000 = 5,000 m

Lesson 2

1
1. (8 X 7) + (8 X 20) = 56 + 160 = 216
2. (6 X 7) + (6 X 20) = 42 + 120 = 162
3. (7 X 6) + (7 X 300) = 42 + 2,100 = 2,142
4. (9 X 3) + (9 X 80) + (9 X 200) = 27 + 720 + 1,800 = 2,547
5. (10 X 70) + (10 X 9) + (5 X 70) + (5 X 9) = 700 + 90 + 350 + 45 = 1,185
6. (20 + 3) X (60 + 8) = (20 X 60) + (20 X 8) + (3 X 60) + (3 X 8) = 1,200 + 160 + 180 + 24 = 1,564
7. (20 + 4) X (600 + 20 + 4) = (20 X 600) + (20 X 20) + (20 X 4) + (4 X 600) +(4 X 20) + (4 X 4) = 14,976

2
1. (8 X 40) + (8 X 5) = 320 + 40 = 360
2. (7 X 200) + (7 X 8) = 1,400 + 56 = 1,456
3. (60 X 50) + (60 X 3) + (4 X 50) + (4 X 3) = 3,392
4. (10 X 40) + (10 X 7) + (3 X 40) + (3 X 7) = 611
5. (20 X 400) + (20 X 70) + (20 X 4) +(4 X 400) + (4 X 70) + (4 X 4) = 8,000 + 1,400 + 80 + 1,600 + 280 + 16 = 11,376
6. (60 X 100) + (60 X 70) + (60 X 4) + (7 X 100) + (7 X 70) + (7 X 4) = 6,000 + 4200 + 240 + 700 + 490 + 28 = 11,658

3
1. 160 + 56 = 216
2. 5,400 + 63 = 5,463
3. 2,800 + 120 + 420 + 18 = 3,358
4. 2,000 + 140 + 300 + 21 = 2,461
5. 10,000 + 1,600 + 80 + 2,000 + 320 + 16 = 14,016
6. 12,000 + 4,800 + 180 + 800 + 320 + 12 = 18,112

4
1. 1,215 2. 1,095 3. 10,059
4. 7,904

5
1. 8 X (100 + 70 + 8) 2. 6 X 237
3. (40 + 5) X (30 + 6)
4. (70 X 10) + (70 X 5) + (2 X 10) + (2 X 5)
5. 37 X 520
6. , 7. Answer by yourself

6
1. 5 X 602 2. 400 + 20 3. 235
4. (50 + 6) X (90 + 3) 5. 83 X 57
6. 56 X 56 7. 48 X 207
8. First model 9. Third model
10. Second model

Assessment 2 on Lesson 2

First

1. ⓑ 7 X 504 2. ⓐ 67 X 23 3. ⓐ
4. ⓒ 4 X (600 + 9)
5. ⓐ 50 + 6

Second

1. 7 X (7,000 + 400 + 80) = 52,360
2. 40 , 6 , 40 , 6 3. 24 X 506
4. 6,230 5. 500 , 5

Third

1. 178 2. 1,665 3. 26,961

Assessment on Concept 1

First

1. ⓒ 5,000 2. ⓑ 2 X 1,000 3. ⓐ
4. ⓒ 42 X 69 5. ⓑ 12 X 302

Second

1. 10,000 2. 7 3. 12 X 57
4. 623 5. 900 , 3

Third

1. 94 2. 322

Fourth

12 X 25 = 300 passengers

Concept 2

Lessons 3-5

1
1. 328 2. 5,472 3. 1,848
4. 74,592 5. 975 6. 2,700
7. 5,508 8. 33,318 9. 147,852
10. 291,504 11. 634,372 12. 309,696

2
1. 114,384 2. 158,100 3. 118,918
4. 454,464 5. 258,468 6. 233,988

3
1. 816 2. 777 3. 12,772
4. 15,695 5. 85,428 6. 230,940

4
1. Actual product: 87,900 ≈ Estimate 70,000
2. Actual product: 167,869 ≈ 20,000
3. Actual product: 32,396 ≈ 20,000
4. Actual product: 215,016 ≈ 180,000

5
1 22 X 25 = 550 passengers
2 Area = 256 X 62 = 15,872 square meters
3 9,560 X 34 = 325,040 piasters
4 1,285 X 21 = 26,985 cm
5 9,865 X 12 = 118,380 pounds
6 1,023 X 18 = 18,414 pounds
7 8,234 X 16 = 131,744 pounds
8 2,445 X 45 = 110,025 g

Assessment on Concept 2

First

1 ⓐ 5,403 X 67 2 ⓑ 3,052 X 43 3 ⓐ
4 ⓓ 75,150 5 ⓐ 69,000

Second

1 116,840 2 576,448 3 157,250

Third

18 X 15 + 18 X 25 = 270 + 450 = 720 pounds

Theme 2

Unit 4

Concept 1

Lessons 1&2

1
1 24	2 17 (R2)	3 28 (R1)
4 93	5 63	6 89 (R2)
7 473	8 123	9 112 (R2)
10 689	11 918	12 769 (R1)
13 1,407 (R2)		

2
1 47	2 67 (R11)	3 34
4 45	5 63	6 35
7 237	8 205	9 357
10 392	11 605	
12 1,654	13 1,233 (R42)	

3
1 552 ÷ 23 = 24
2 1,522 ÷ 24 = 63 (R10)
3 4,635 ÷ 45 = 103
4 7,776 ÷ 32 = 243
5 1,856÷15=123 (R11)
6 10,016 ÷ 32 = 313
7 8,575 ÷ 35 = 245
8 7,631 ÷ 21=363 (R8)

4
1 1,248 , 0
2 16,817 , 31 , 542 , 15
3 53,328 , 24 , 2,222 , 0
4 25,716
5 10,092 , 42 , 240 , 12

5
1 Solution: 406 , Estimate: 400
2 Solution: 1,147 (R2) , Estimate: 1,100
3 Solution: 4,002 (R6) , Estimate: 4,000
4 Solution: 345 , Estimate: 300
5 Solution: 46 (R74) , Estimate: 50
6 Solution: 48 (R55) , Estimate: 50
7 Solution: 412 , Estimate: 500
8 Solution: 2,555 , Estimate: 2,500
9 Solution: 251 (R15) , Estimate: 250
10 Solution: 308 , Estimate: 300

Assessment on Lessons 1&2

First

1 ⓒ 1,960 ÷ 8 = 245
2 ⓐ 14 3 ⓓ 0
4 ⓒ 4,035 5 ⓐ 5

Second

1 817 (R6)
2 302 (R10)
3 3,208 (R10)

Third

1 400 ÷ 4 = 100 LE
2 138 ÷ 6 = 23 people

Assessment on Concept 1

First

1 ⓓ 146 — 2 ⓓ 4
3 ⓒ 450 — 4 ⓐ 20

Second

1 5,026 (R6) — 2 3,859 — 3 258
4 3,012 (R9)

Third

1 9,000 — 2 5 — 3 340,000
4 36,000

Fourth

1 7,280 ÷ 5 = 1,456 pounds
2 168 ÷ 12 = 14 groups

Concept 2

Lessons 3-5

1
1 15 — 2 28 (R2) — 3 26
4 208 (R2) — 5 252 — 6 131
7 295 — 8 472 (R2) — 9 705
10 2,004 — 11 3,059 — 12 7,006

2
1 24 — 2 11 — 3 125
4 205 — 5 303 — 6 124 (R12)
7 105 — 8 214 — 9 347 (R17)
10 2,581 — 11 2,214 — 12 2,451

3
1 123 — 2 189 — 3 1,324

4
1 35 — 2 6,048 — 3 4
4 1,998 — 5 4,876 — 6 3,479
7 105 — 8 102 — 9 111
10 14,042

5
1 140 ÷ 12 = 11 (R8) → 12 trays are needed
2 Silk = 11,650 – 4,950 = 6,700 m
Wool = 6,700 – 3,500 = 3,200 m
Total = 11,650 + 6,700 + 3,200 = 21,550 m
3 Mighty Steel: 3 X 100,000 = 300,000 LE
Silver Steel: 5 X 70,000 = 350,000 LE
Money saved = 350,000 – 300,000 = 50,000 LE
4 Zeinab used = 12 X 18 = 216 squares
Reem used = 13 X 13 = 169 squares
The difference = 216 – 169 = 47 squares
5 Profit: (30 X 25) X 3 = 2,250 LE
Basketball = 2,250 – 1,134 = 1,116 LE
6 The distance = 465 – (124 + 210)
= 465 – 334 = 131 km
7 The price of one book = 1,875 ÷ 25 = 75 pounds
The price of 25 books = 36 X 75 = 2,700 pounds
8 The remaining money = 163,500 – 85,500 = 78,000 pounds
Value of each installment = 78,000 ÷ 24 = 3,250 pounds
9 Total number of students = 456 + 419 = 875 students
Number of students in each class = 875 ÷ 25 = 35 students
10 The area of land = 124 X 85 = 10,540 square meters
The number of basins = 10,540 ÷ 62 = 170 basins

Assessment on Concept 2

First

1 ⓓ 437 — 2 ⓑ 25 — 3 ⓒ 26
4 ⓐ 22 X 36 + 10 — 5 ⓑ 40

Second

1 240,000 — 2 500 — 3 0
4 8 — 5 18,000

Third

The remaining people = 205 – 40 = 165 persons
Number of microbuses = 165 ÷ 11 = 15 microbuses

Unit 5

Concept 1

Lessons 1&2

1

1 120	2 900	3 101,000
4 6.5	5 0.26	6 0.017
7 5	8 75	9 256
10 0.02	11 0.0036	12 0.00012
13 32.5	14 412	15 3,190
16 4.212	17 0.5512	18 0.03601
19 0.2	20 36	21 170
22 0.635	23 0.4214	24 0.0031

2

1 12.5	2 2.4	3 12.15
4 0.84	5 1.56	6 0.017
7 16.65	8 86.04	9 0.759
10 0.04	11 0.405	12 19.05
13 28.8	14 5.85	15 81.4
16 56.7	17 223.6	18 246
19 136.4	20 93.15	21 8.395
22 18.6	23 36.24	24 40.32

3

1 5	2 33	3 20
4 7	5 3	6 2
7 0.5	8 0.5	9 0.7
10 2.4	11 2.4	12 17
13 10	14 100	15 1,000
16 0.1	17 0.01	18 0.001
19 1,000	20 100	21 10
22 0.1	23 1,000	24 0.001

4

1 =	2 <	3 <
4 <	5 >	6 <
7 =	8 =	9 >
10 >		

5

1 → c	2 → a
3 → d	4 → b

6

1 1.5	2 4	3 12
4 3	5 12	6 2 , left
7 10	8 0.001	9 0.4 , 40
10 20	11 0.1	12 800
13 2	14 1.1	15 3

Assessment 1 on Lessons 1&2

First

1 800	2 0.3	3 0.045
4 14	5 525	

Second

1 =	2 >	3 >
4 <	5 <	

Third

1 → b	2 → d
3 → a	4 → c

Fourth

1 12	2 33.68	3 3 , left
4 0.1	5 0.092	

Lessons 3&4

1

1 0.06	2 0.16	3 0.48
4 0.07	5 0.12	6 0.45
7 0.28	8 0.45	9 0.77
10 0.48		

2

1 0.3 X 0.4 = 0.12	2 0.7 X 0.8 = 0.56
3 0.4 X 0.8 = 0.32	4 0.2 X 0.2 = 0.04
5 0.8 X 0.8 = 0.64	6 0.1 X 0.7 = 0.07
7 0.3 X 1.3 = 0.39	8 0.6 X 1.7 = 1.02
9 1.1 X 0.2 = 0.22	
10 0.3 X 1.7 = 0.51	

3

1 3.78	2 0.376	3 121.8
4 3.78	5 1.824	6 182.7
7 0.54	8 46.62	9 0.648
10 283.5	11 141.75	12 2.898
13 148.4	14 111.851	15 2.422
16 6.069		

4

1 0.4 X 0.52 = 0.208	2 7 X 2.3 = 16.1
3 0.3 X 21.4 = 6.42	4 0.27 X 4.3 = 1.161
5 3.5 X 45 = 157.5	6 0.92 X 0.54 = 0.4968
7 47 X 0.142 = 6.674	8 4.7 X 3.49 = 16.403

5

1 1.6 X 0.8	2 0.9 X 0.3	3 50.3 X 7.32
4 5.07 X 22.3	5 1,200	6 7.2
7 =	8 <	

Assessment 2 on Lessons 3&4

First

1. 0.2 X 0.2 = 0.04
2. 0.4 X 0.7 = 0.28
3. 0.6 X 0.2 = 0.12
4. 0.4 X 1.3 = 0.52
5. 0.2 X 1.6 = 0.32

Second

1. 2.9 X 0.7 = 2.3
2. 10.08 X 90.2 = 909.216
3. 852 X 0.24 = 204.48

Third

1. 0.2
2. 0.3
3. 2.5
4. 400

Fourth

The area of one wall = 15 X 4 = 60 square meter

The painted area = 60 X 4 = 240 square meter

Lessons 5&6

1 [35 X 12 = 70 + 350 = 420]

1. 42
2. 4.2
3. 4.2
4. 0.42
5. 0.42
6. 4.2
7. 42
8. 0.042

2 [105 X 24 = 420 + 2,100 = 2,520]

1. 252
2. 25.2
3. 25.2
4. 2.52
5. 2.52
6. 25.2
7. 252
8. 0.252

3

1. 25.2
2. 1.84
3. 54.63
4. 6.912
5. 26.963
6. 70.056
7. 481.91
8. 42.875
9. 10.795
10. 96.672
11. 72.072
12. 78.48

4

1. =
2. $>$
3. $<$
4. =
5. $<$
6. =
7. $<$
8. $>$
9. $>$
10. $<$

5

1. Nada paid = 26 X 43.5 = 1,131 pounds
2. Khaled paid = 9.5 X 12.7 = 120.65 pounds
3. The price = 12 X 22.25 = 267 LE
4. 10 X 92.5 = 925 pounds,
   6.5 X 58 = 377 pounds
   The merchant paid = 925 + 377 = 1,302 pounds
5. 7.9 + 3.6 = 11.5 km
   11.5 X 6 = 69 km

Assessment 3 on Lessons 5&6

First

1. 0.825
2. 2.1
3. 0.0006
4. 0.03
5. 0.03

Second

1. 12.88 ≈ 12.9
2. 2.044 ≈ 2.04
3. 128.96 ≈ 129

Third

1. 12.204
2. 12.204
3. 1220.4
4. 12.204
5. 1.2204
6. 0.12204

Fourth

1. $>$
2. $>$
3. =
4. $<$

Lessons 7-9

1

1. 8,523 X 0.001 = 8.523
2. 954 X 0.001 = 0.954
3. 25 X 0.001 = 0.025
4. 78 X 1,000 = 78,000
5. 2.5 X 1,000 = 2,500
6. 1.24 X 1,000 = 1,240
7. 23 X 1,000 = 23,000
8. 0.753 X 1,000 = 753
9. 235 X 0.001 = 0.235
10. 3,235 X 0.001 = 3.235
11. 32 X 100 = 3,200
12. 3.35 X 100 = 335
13. 0.12 X 10 = 1.2
14. 45 X 0.01 = 0.45
15. 1,247 X 0.01 = 12.47
16. 7.5 X 10 = 75
17. 7.5 X 1,000 = 7,500
18. 85 X 0.001 = 0.085
19. 235 X 0.1 = 23.5
20. 2.8 X 10 = 28

2

1. 6,520
2. 0.549
3. 0.062
4. 63,500
5. 0.45
6. 2.8

7 3,200	8 0.045	9 45	10 25.6

3

1 >	2 =	3 <	4 >
5 >	6 >	7 <	8 >
9 <	10 >		

4

1 ✗	2 ✓	3 ✓	4 ✗
5 ✗	6 ✗	7 ✓	8 ✓
9 ✓	10 ✗		

5

1. The increase = 145 – 134 = 11 cm
2. Hazem paid = 7 X 23.5 = 164.5 pounds
3. Weight of mangoes = 5 X 9,500 = 47,500 g
   Weight of peaches = 3 X 4,600 = 13,800 g
   Total = 47,500 + 13,800 = 61,300 g
4. The sum = 145 + 164 = 309 cm
   The difference = 164 – 145 = 19 cm
5. 1,250 + 2,450 = 3,700 mL
   4,000 – 3,750 = 300 mL

Assessment 4 on Lessons 7–9

First

1. (c) 7,850   2. (a) 0.46   3. (d) 5,200
4. (a) 10   5. (b) 2.5

Second

1. 456 X 0.01 = 4.56
2. 5.9 X 1,000 = 5,900
3. 4,258 X 0.01 = 42.58
4. 0.001

Third

1 >   2 =   3 <   4 <

Fourth

The cat: 7 + 0.45 = 7.45 kg
The dog: 17 + 0.12 = 17.12 kg
Total = 7.45 + 17.12 = 24.57 kg

Assessment on Concept 1

First

1. (c) 0.3 X 0.5   2. (b)   3. (c) 4
4. (d) 480   5. (a) 0.024

Second

1. 0.001   2. 0.0288
3. 4,258 ÷ 0.001 = 4.258   4. 0.28   5. 0.28

Third

1 <   2 >   3 <   4 <

Fourth

1. The distance = 58.7 X 9 = 528.3 km
2. The price = 20 X 65.5 = 1,310 pounds

Concept 2

Lessons 10&11

1

1 1.7	2 0.08	3 0.102
4 450	5 2,300	6 45,000
7 0.06	8 0.0012	9 0.125
10 9	11 27	12 420
13 0.424	14 0.0813	15 0.417
16 617.5	17 4,572	18 27,040
19 0.007	20 0.0096	21 0.034
22 56.3	23 6,375	24 4,200
25 0.635	26 0.4214	27 0.031

2

1 8	2 632	3 20,000
4 6	5 4	6 0.3
7 3	8 7	9 9
10 0.24	11 0.025	12 0.96
13 0.01	14 0.01	15 0.001
16 10	17 100	18 1,000
19 0.001	20 0.01	21 0.1
22 10	23 0.001	24 1,000

3

1 0.1 , 10	2 1,000 , 0.001
3 10 , 0.1	4 100 , 0.01
5 0.01 , 100	6 10 , 0.1
7 100 , 0.01	8 0.1 , 10
9 0.001 , 1,000	10 0.001 , 1,000
11 1,000 , 0.001	12 0.001 , 1,000

4

1 → (b)	2 → (c)	3 → (a)
4 → (e)	5 → (d)	

5

1 <	2 >	3 =	
4 <	5 =	6 =	
7 <	8 >	9 >	10 =

6
1. 65 X 1,000 = 65,000
   65 ÷ 0.001 = 65,000
2. 2.5 X 100 = 250
   2.5 ÷ 0.01 = 250
3. 5 X 1,000 = 5,000
   5 ÷ 0.001 = 5,000
4. 923 X 0.001 = 0.923
   923 ÷ 1,000 = 0.923
5. 23 X 1,000 = 23,000
   23 ÷ 0.001 = 23,000
6. 25 X 0.1 = 2.5
   25 ÷ 10 = 2.5
7. 225 X 0.001 = 0.225
   225 ÷ 1,000 = 0.225
8. 200 X 0.001 = 0.2
   200 ÷ 1,000 = 0.2
9. 2.5 X 10 = 25
   2.5 ÷ 0.1 = 25
10. 42 X 10 = 420
    42 ÷ 0.1 = 420

Assessment 5 on Lessons 10&11

First

1 0.45	2 0.025	3 1,250
4 57.4	5 0.56	6 20
7 0.1	8 0.01	9 785
10 1,000		

Second

1. 137 X 0.01 = 1.37
   137 ÷ 100 = 1.37
2. 86 X 1,000 = 86,000
   86 ÷ 0.001 = 86,000
3. 8,102 X 0.001 = 8.102
   8,102 ÷ 1,000 = 8.102

Third

1 =	2 <	3 <	4 <

Lessons 12&13

1

1 26.2	2 2.955	3 0.947
4 6.37	5 0.014	6 0.63
7 24.3	8 4.03	

2

1 0.35	2 2.615	3 0.805
4 5.04	5 6.25	6 5.5
7 1.14	8 2.52	9 1.5

3

1 113.1	2 734	3 207
4 2.56	5 350	6 1,167.5
7 505	8 1.2	9 304
10 9.88	11 8.41	12 11

4

1 0.53	2 3.1	3 530
4 310	5 53	6 3.1
7 5.3	8 310	9 16.43
10 16.43	11 164.3	12 1.643
13 164.3	14 1.643	15 16.43
16 1,643		

5

1 =	2 <	3 >
4 =	5 >	6 <
7 <	8 >	9 > 10 =

6
1. 350 ÷ 12.5 = 28 days
2. 99 ÷ 5 = 19.8 pounds
3. 214.2 ÷ 9 = 23.8 pounds
4. 728 ÷ 5 = 145.6 pounds
5. 210 ÷ 4 = 52.5 L
6. (6 X 4.25) ÷ 2 = 12.75 kg
7. 3,000 X 14 = 42,000 m = 42 km
   42 + 14 = 56 km
8. (20 – 4.5) ÷ 5 = 3.1 kg

Assessment 6 on Lessons 12&13

First

1 29	2 133	3 25

Second

1 4,340	2 434	3 43.4
4 43,400	5 4.34	6 12
7 1.2	8 12	9 120
10 0.012		

Third

1 → b	2 → a	3 → d
4 → e	5 → c	

Assessment on Concept 2

First

1 a 0.045	2 b 6	3 d 100

4 ⓓ 9.6 X 10   5 ⓒ 25

Second

1 0.1   2 180   3 100
4 453.6   5 0.12

Third

1 → ⓒ   2 → ⓐ   3 → ⓓ   4 → ⓑ

Fourth

Number of bags = 83.5 ÷ 0.45 = 1,850 bags

Unit 6

Concept 1

Lessons 1-4

1
1 4.7   2 5.9   3 4.99
4 22.8   5 1.68   6 3
7 40   8 0.4   9 30.2
10 33.8   11 17.1   12 1.41
13 7.5   14 0   15 5

2
1 25   2 7.3   3 0.75
4 200   5 12.2   6 0
7 30.5   8 3.97   9 81.9
10 32   11 31.3   12 2.1
13 90   14 51   15 16
16 7.5

3
1 3.36   2 0.35   3 1.5
4 40   5 0.6   6 2.9
7 4   8 10   9 0.8

4
1 5   2 26.6   3 31.5
4 9.75   5 9   6 9

5
1 → ⓒ   2 → ⓓ
3 → ⓐ   4 → ⓑ

6
1 (5.9 + 12.6) X 10 = 18.5 X 10 = 185
2 (5.25 + 3.1) ÷ 0.1 = 8.35 ÷ 0.1 = 83.5
3 0.542 X 100 + 2.5 = 54.2 + 2.5 = 56.7
4 456 ÷ 10 + 4.4 = 45.6 + 4.4 = 50
5 (93 ÷ 0.3 + 114.7) ÷ 5 = (310 + 114.7) ÷ 5
= 424.7 ÷ 5 = 84.94
6 [12.5 – (30.5 + 5.5 + 4)] X 10
= [125.5 – 40] X 100 = 8,550
7 (7.6 X 100 – 34.3 + 12.4) ÷ 0.1 = 738.1 ÷ 0.1
=7,381
8 4.5 ÷ 0.1 + 5.5 X 10 = 45 + 5.5 X 10
= 45 + 55 = 100

7
1 (16.5 – 1.5) ÷ 5 = 3 kg
2 2.5 X 14 + 54.2 = 35 + 54.2 = 89.2 km
3 6 X 12 ÷ 8 = 9 balloons

8
1 20 , 23 , 26   Rule: n + 3
2 33 , 38 , 43   Rule: n + 5
3 34 , 30 , 26   Rule: n – 4
4 40 , 30 , 20   Rule: n – 10
5 64 , 128 , 256   Rule: n X 2
6 243 , 729 , 2,187   Rule: n X 3
7 16 , 8 , 4   Rule: n ÷ 2

9
1 8 , 10 , 27   Rule: n –7
2 20 , 38 , 48   Rule: n – 8
3 8 , 11 , 13   Rule: n + 3
4 8 , 9 , 10   Rule: n + 5
5 13 , 11 , 15   Rule: n ÷ 3
6 18 , 9 , 12   Rule: n X 3
7 3 , 18 , 22   Rule: n ÷ 2
8 18 , 24 , 30   Rule : n X 3

10
1 3 , 25 , 7 , 45 , 11   2 9 , 9 , 45 , 24 , 81
3 16 , 20 , 24 , 28 , 32
4 8 , 9 , 10 , 11 , 12

Assessment on Concept 1

First

1 ⓐ 8   2 ⓑ 0.6
3 ⓑ (3.5 + 3.7) X 0.8   4 ⓓ
5 ⓒ 5.6 + 0.5 – 0.6   6 ⓒ n X 4
7 ⓐ n – 12

Second

1 11.2   2 20   3 48.4

Third

(15.75 – 3.75) ÷ 16 = 0.75 L

Guide Answers
Assessments on Units

Assessment on Unit 

First

1. ⓒ Forty-five thousand and four hundredths
2. ⓐ 6,020,400,080
3. ⓑ 7.52
4. ⓐ 57.024
5. ⓒ 48.0
6. ⓒ 3 + 0.07
7. ⓓ 8.523
8. ⓑ <
9. ⓒ 0.3 – 0.25
10. ⓒ 0.22 + 0.1

Second

1. 65,000,000.005
2. Hundredths, 0.09
3. 5.647
4. 43.8
5. 420.108
6. 459.5
7. 66
8. 4
9. 0.38
10. 1

Third

1. → ⓑ
2. → ⓐ
3. → ⓓ
4. → ⓔ
5. → ⓒ

Fourth

1. <
2. <
3. >
4. >
5. <

Fifth

1. 25,327 + 47,128 = 72,455 liters
2. 446.3 – 267.53 = 178.77 km
3. 70.45 + 67.40 = 137.85 pounds
   342.5 – 137.85 = 204.65 pounds

Assessment on Unit 2

First

1. ⓒ an equation
2. ⓐ the other number
3. ⓑ (26.3 – 10.04) – 12.4
4. ⓑ y = 2.63 – 1.2
5. ⓓ other
6. ⓐ 2 X 2 X 2
7. ⓓ their product
8. ⓒ 9
9. ⓐ 12
10. ⓓ 10 , 15

Second

1. 1.989
2. odd , 2
3. 2.23
4. 7
5. 4.02 + a = 12
6. 1 , 5 , 25
7. 5 X 5
8. 30
9. 0
10.

S	
0.12	7.25

Third

GCF = 6 LMC = 36

Fourth

GCF = 5 groups

5 bouquets

5 blue roses and 3 red roses

Cumulative Assessment 1 on Units 1&2

First

1. Hundredths
2. 15.89
3. 2 , 3 , 3
4. 0

Second

1. ⓓ 0.425
2. ⓒ 4 + 0.06
3. ⓒ 2
4. ⓓ 4

Third

1. >
2. <
3. <
4. <

Fourth

1. 100.3 + 64.7 = 165 km
   225 – 165 = 60 km
2. GCF = 8 , LCM = 48

Cumulative Assessment 2 on Units 1&2

First

1. 2, even
2. 23,29
3. 350.208
4. 5,000,030,000.099

Second

1. ⓒ 3.5 + m = 8.7
2. ⓒ 7.825
3. ⓐ >

Third

1. ✗
2. ✓
3. ✓

Fourth

GCF = 4 groups

4 girls and 3 boys

Assessment on Unit 3

First

1 ⓑ = 2 ⓒ < 3 ⓐ
4 ⓒ 5 ⓑ 62 X 57 6 ⓐ
7 ⓑ 8 ⓒ 4,095 X 46
9 ⓒ 1,000 10 ⓐ 12 X 260

Second

1 900,000 2 10,000 3 7
4 100 5 20 , 3 6 3,504
7 65 X 38 8 990 9 60,240
10 3,016

Third

1 → ⓒ 2 → ⓐ 3 → ⓓ 4 → ⓑ

Fourth

1 382,644 2 144,504 3 402,536

Fifth

20 X 140 = 2,800 g

20 X 120 = 2,400 mL

2,400 X 35 = 84,000 mL = 84 L

Cumulative Assessment 1 on Units 1–3

First

1 0.4 – 0.025 = 0.375 2 7
3 10 , 2 , 5 , 5

Second

1 ⓒ 21 X 16 2 ⓐ 12.084 3 ⓒ 12

Third

1 16,944 2 9,936 3 192,256

Fourth

1 ✗ 2 ✓ 3 ✓

Fifth

17 + 19 = 36 students

36 X 25 = 900 students

Cumulative Assessment 2 on Units 1–3

First

1 ⓒ the product of the two numbers
2 ⓑ 3 ⓓ 0.06

Second

1 2,346 2 61 3 4.77

Third

1 = 2 < 3 >

Fourth

1 → ⓑ 2 → ⓒ 3 → ⓐ

Fifth

1 23 X 235 = 5,405 piasters
2 GCF = 6 , LCM = 36

Assessment on Unit 4

First

1 ⓒ 428 2 ⓑ 323 X 25 3 ⓐ
4 ⓒ 600 5 ⓐ 24,000 6 ⓑ 50
7 ⓓ 207 8 ⓑ 65 9 ⓓ 0
10 ⓐ 8,935

Second

1 24,000 2 80 3 3,004
4 5,012 5 8

Third

Answer by yourself.

Fourth

1 = 2 > 3 =
4 > 5 <

Fifth

1 4,530 ÷ 15 = 302 pounds
2 570 + 600 = 1,170 students
1,170 ÷ 26 = 45 students

Cumulative Assessment 1 on Units 1–4

First

1 0.03 + 0.006 2 1 , 3 , 5 , 15
3 4 4 72 , 8 , 8

Second

1. ⓒ prime
2. ⓒ 0.09
3. ⓐ <
4. ⓓ 12

Third

1. 124
2. 34 (R15)

Fourth

1. 288 ÷ 24 = 12 pounds
2. 1.45 – 1.39 = 0.06 m
3. GCF = 3 , LCM = 18

Cumulative Assessment 2 on Units 1-4

First

1. 806
2. 131,874
3. 15.647
4. 618.147

Second

1. ⓒ Tenths
2. ⓑ 8
3. ⓐ 0
4. ⓐ 16,884 ÷ 42

Third

1. >
2. <
3. =
4. <

Fourth

1. LCM = 24 days
2. 1.205 , 10.25 , 12.05 , 120.5 , 1,205

Assessment on Unit 5

First

1. ⓐ 0.036
2. ⓑ 4.5
3. ⓒ 0.3 X 0.2
4. ⓐ
5. ⓓ 0.015
6. ⓓ 100
7. ⓒ 3.624
8. ⓑ 0.24 X 6.2
9. ⓐ
10. ⓓ 4.5 X 10

Second

1. 12
2. 12 X 28 = 336
3. 0.29 X 1,000 = 290
4. 0.96
5. 9.32
6. 0.1
7. 20,000
8. 100
9. 0.02
10. 8

Third

1. =
2. >
3. =
4. <

Fourth

1. 15.725
2. 396.592
3. 294.784
4. 91
5. 5
6. 2.54

Fifth

1. 3 X 4.75 = 14.25 pounds
   4 X 1.25 = 5 pounds
   14.25 + 5 = 19.25 pounds
2. 17 X 2.25 = 38.25 pounds
   50 – 38.25 = 11.75 pounds
3. 243.75 ÷ 0.75 = 325 mottles
4. Width = 10.25 ÷ 4.1 = 2.5 m.
   P = (2.5 + 4.1) X 2 = 13.2 m.

Cumulative Assessment 1 on Units 1-5

First

1. ⓑ 10
2. ⓓ 54
3. ⓓ 3

Second

1. 7.32
2. 0.654
3. 1 , 2 , 4 , 7 , 14 , 28

Third

1. 2.4
2. 5.145
3. 70.07
4. 25.35

Fourth

1. <
2. <
3. <

Fifth

1.035 – 0.825 = 0.21 kg

Cumulative Assessment 2 on Units 1-5

First

1. ⓒ 9.75
2. ⓑ 5
3. ⓐ the sum of the two numbers
4. ⓑ 1,000

Second

1. 708.309
2. 6 , 12 , 18 , 24 , 30
3. 0.918

Third

1. 2.45
2. 753.45
3. 0.815
4. 20

Fourth

1 =   2 <   3 >   4 >

Assessment on Unit 6

First

1 a 9.5   2 b 6 – 2.7

3 c 1.5 X 1.2 – 0.5

4 b divide 2.5 by 0.5, then add 1.2

5 c 1.3 + 0.3 – 0.5

6 a n + 11   7 c 13

8 b 2 , 0.4 , 0.08 , 0.016 .....

9 b 1   10 n X 3 + 1

Second

1 99   2 5.5   3 26 , 42

4 18 , 21   5 10

Third

1 (3.62 - 2.1) X 3 = 1.52 X 3 = 4.56

2 85 ÷ 0.5 + 136.7 = 170 + 136.7 = 306.7

Fourth

1 2 , 4.5 , 7 , 9.5 , 12

2 5 , 7.5 , 12.5 , 22.5 , 42.5

3 40 , 200 , 1,000 , 5,000 , 25,000

Fifth

38,700 ÷ 120 = 322.5 m

Cumulative Assessment 1 on Units 1–6

First

1 0.38   2 7

3 33.8   4 14.8

Second

1 a equation   2 b 4 X 807

3 b 25,025   4 b 0.01

Third

1 d   2 a

3 b   4 e   5 c

Fourth

1 13 , 11 , 15   rule n ÷ 3

2 50.96   3 23

Cumulative Assessment 2 on Units 1–6

First

1 0.4   2 28

3 4

4

X	40	5
70	2,800	350
5	200	25

Second

1 b 5 + 3.21   2 a 7

3 a 0   4 b 2 , 3.5 , 5 , 6.5 , 8

Third

1 c   2 d

3 a   4 b

Fourth

1 8 , 11 , 13 Rule: (n + 3)

2 105.24   3 2,760

Guide Answers Final Revision

First Choose

- 1 7,000,050,000.07
- 2 Hundred Thousand
- 3 4.45
- 4 2 53/1000
- 5 400
- 6 0.060
- 7 0.609
- 8 5,200.023
- 9 40.056
- 10 8
- 11 2.526
- 12 0.26
- 13 25.8
- 14 450
- 15 0.805
- 16 increases
- 17 right
- 18 23.023
- 19 824+0.12
- 20 increases from 0.7 to 7
- 21 32.63
- 22 450.204
- 23 8.5
- 24 100
- 25 56.8
- 26 >
- 27 56.02
- 28 2.456
- 29 0.01
- 30 381.66
- 31 <
- 32 39.02
- 33 hundredth
- 34 <
- 35 3 tenths
- 36 75.34
- 37 78
- 38 4,040.44
- 39 75.599
- 40 403
- 41 0.744
- 42 37.95
- 43 Second model
- 44 0.58 + 0.37
- 45 2
- 46 72.84
- 47 3.98
- 48 4.55
- 49 0.53
- 50 7.55
- 51 1
- 52 15
- 53 19
- 54 20.078
- 55 <
- 56 mathematical expression
- 57 Other
- 58 number of boys
- 59 first model
- 60 0.36
- 61 m = 6.35 + 3.14
- 62 first model
- 63 59
- 64 12
- 65 Prime
- 66 11
- 67 One
- 68 5
- 69 8.6-7.4
- 70 5
- 71 18
- 72 2
- 73 1
- 74 35
- 75 7
- 76 7
- 77 5,000
- 78 25,025
- 79 5x183
- 80 4x807
- 81 Second model
- 82 9
- 83 7x504
- 84 5,403x67
- 85 240,000
- 86 30
- 87 6
- 88 4 weeks, 2 days
- 89 189,025
- 90 60
- 91 63,000
- 92 5x5
- 93 60
- 94 4,035
- 95 20
- 96 101
- 97 24
- 98 437
- 99 40
- 100 10
- 101 1
- 102 Dividend
- 103 8
- 104 1
- 105 1
- 106 0.3x0.9
- 107 1,200
- 108 3
- 109 0.027
- 110 7.641
- 111 4.632
- 112 7,850
- 113 0.46
- 114 5,200
- 115 Second model
- 116 [13.5 + 2.5] ÷ 4
- 117 10,000
- 118 0.224
- 119 68.39
- 120 5.6 + 0.5 – 0.6
- 121 n + 6
- 122 n X 2 + 1
- 123 n ÷ 10
- 124 n + 2
- 125 480 X 7
- 126 X
- 127 29 ÷ 3
- 128 3.6 + 1.6 = x

Second Complete

- 1 Tenths – 0.6
- 2 Nine thousand three and thirty-six hundredths
- 3 3 – 2 – 5
- 4 1.27
- 5 27
- 6 2,000+400+9+0.008
- 7 34.62
- 8 0.012
- 9 45.27
- 10 Whole number
- 11 65

12 328
13 48 thousandths
14 75
15 1.5
16 6,966.34
17 2
18 8.79
19 2
20 Multiple
21 Factor
22 3
23 Prime number
24 11
25 11
26 24
27 36
28 4
29 1
30 Their product
31 1
32 0
33 15
34 2
35 4
36 50
37 2
38 1
39 Dividend
40 $<$
41 75
42 4,258 x 0.01 = 42.58
43 0.1 - 10
44 700 x 20
45 0.01
46 20
47 29.7
48 60
49 47x38
50 1.37
51 1
52 632
53 1,000
54 2.282
55 8
56 14,000
57 18.000
58 3.15
59 0
60 4.7
61 40
62 31.5
63 20 , 23 , n + 3
64 23 , 28 , n + 5

Third Answer the following

1 148 km

2 1.5 – (0.5 + 0.7) = 0.3 L

3 56.5 – (12.25 + 15.5) = 28.75 pounds

4 X = 21 + 15 = 36

X	
21	15

5 x = 225 – 107.5 = 117.5

225	
X	107.5

6 x = 7.382 – 2.456 = 4.926

7.382	
X	2.456

7 w= 9.2 – 5.025 = 4.175

9.2	
w	5.025

8 after 12 days

9 12 x 25 = 300 passengers

10 area = 256 x 62 = 15,872 m^2

11 1,023 x 18 = 18,414 pounds

12 96 ÷ 4 = 24 books

13 76 ÷ 6 = 12 R4

14 256 x 8 = 2,048 balls

15 2,880 ÷ 12 = 240 cups

16 480 ÷ 15 = 32 microbuses

17 the left money =
69,380 - 65,940 = 3,440 pounds
Value of each installment =
3,440 ÷ 4 = 860 pounds

18 (20 x 40) + (20 x 3) + (6 x 40) + (6 x 3)
= 1,118

19 1.135 , 1.315 , 1.351 , 1.531 , 3.135

20 45.235 + 52.012 = 97.247 kg

21 99.8 + 45.75 + 70.25 = 215.8 pounds
she can not

22 748.3

23 1 , 2 , 3 , 4 , 6 , 9 , 12 , 18 , 36
1 , 2 , 3 , 4 , 6 , 8 , 12 , 24
1 , 2 , 3 , 4 , 6 , 12 GCF = 12

24 Ahmed = 125 x 10 = 1,250 pounds
Mariam = 125 x 6 = 750
Total = 1,250 + 750 + 125 = 2,125

25 7 + 3 x 2 – 12 ÷ 10 = 11.8

26 5 , 10 , 15 , 20 , 25

27 20 x 65.5 = 1,310 m

28 remainder = 95.5 - 35.75 = 59.75 pounds

29 1

30 (9.8 - 2.6) x 0.01 = 0.072

31 200 + 80 + 5 + 0.2 + 0.08 + 0.005

32 590 m , 0.65 km , 0.8 km , 1km

33 k =5.4

34 10 , 8.5 13.75 n + 1.5

Guide Answers Model Exams

(1) Cairo (Al Basatin District)

First

1. 0.60
2. 30
3. 8,975
4. 2
5. $<$
6. 0.25
7. 1.625

Second

1. 0.823
2. 34.62
3. 18.99
4. 1.426
5. 2,134
6. 0
7. 20
8. 14

Third

1. 0.453
2. 0.08
3. 7.667
4. 25.5
5. 50 +n = 80
6. 29 ÷ 3
7. 20

Fourth

1. 12 = 2 X 2 X 3
   18 = 2 X 3 X 3
   GCF = 2 X 3 = 6
   LCM = 2 X 2 X 3 X 3 = 36
2. 12 + (4.6 – 2.6) X 4 = 12 + 2 X 4 = 12 + 8 = 20
3. (9.8 – 2.6) X 0.01 = 7.2 X 0.01 = 0.072
4. The number of kilometers
   = 14 X 120 = 1,680 km

(2) Giza (Al Ayyat District)

First

1. 0.6
2. 2
3. 1
4. 8.53
5. n X 2
6. 13
7. 18.047

Second

1. hundredths
2. 0.37
3. 65
4. 1
5. 30
6. 4
7. 30
8. 30.3

Third

1. 341
2. 8,000
3. 3.6 + 1.6 = x
4. 6
5. 2 and 7
6. $<$
7. 4.632

Fourth

1. The difference = 2.569 – 1.269 = 1.3 km
2. GCF = 2 X 3 = 6
   LCM = 2 X 2 X 3 X 3 = 36
3. 285.285 = 200+80+5+0.2+0.08+0.005
4. The price of bottles = 24.5 X 100 = 2,450 LE

(3) Giza (Imbaba District)

First

1. 120
2. 0.008
3. 2
4. 1.58
5. 1,000
6. 60
7. 6

Second

1. 0.8
2. 1
3. 0.85
4. 3
5. 3
6. 12
7. 23.57
8. 5.77

Third

1. 7
2. 17
3. 4.5
4. 9
5. 0
6. 0
7. 3

Fourth

1. GCF = 3
   LCM = 3 X 3 X 2 X 2 = 36
2. 1.2 X 32 = 38.4
3. They saved = 75.8 + 24.2 = 100 LE
4. 144 ÷ 12 = 12

(4) Giza (El Dokky District)

First

1. $a + 3.1 = 5$
2. 2
3. 4
4. 4.041
5. $n + 3$
6. 24
7. 15

Second

1. 1.29
2. 1.2
3. 0.07
4. $72 \div 4 = 18$
5. 20
6. 7,000
7. 4
8. 8.64

Third

1. 1
2. 0.01
3. 36
4. 8
5. 1,000
6. >
7. 10

Fourth

1. GCF = 2
   LCM = $2 \times 5 \times 3 = 30$
2. $0.35 \div 0.5 = 3.5 \div 5 = 0.7$
3. Ahmed paid = $10 \times 8.5 = 85$ pounds
4. 590 m , 0.65 km , 0.8 km , 1 km

(5) Al Azhar Al Sharif

First

1. 0.008
2. 3.57
3. $n + 2$
4. 2.39
5. 2

Second

1. 7.5
2. 1
3. 6.3
4. 6
5. 27.005
6. 45.072 , 45.572 , 45.702 , 45.729
7. Mohamed bought = $3.75 + 2.25 = 6$ kg

Third

1. 230
2. 7
3. 60
4. 125 R 1
5. 15
6. 2.2
7. 60

Fourth

1. GCF = 3
   LCM = $3 \times 3 \times 2 \times 2 = 36$
2. $2,250 \div 25 = 90$
3. $2.33 \times 2.4 = 5.592$
4. The difference = $2.569 - 1.269 = 1.3$ km

(6) Alexandria (Middle District)

First

1. >
2. 2
3. Hundredths
4. 3.6
5. 0.0855
6. 4.2
7. 25 Hundreds

Second

1. 20
2. 6.081
3. $n + 5$
4. 0.02
5. 2,157
6. 3
7. 3 and 7
8. 2.06

Third

1. 1.5
2. 2.003
3. 0.2
4. 95.63
5. 18
6. 36
7. 3.64

Fourth

1. GCF = 5
   LCM = $3 \times 5 \times 2 = 30$
2. $3.4 \times 1.8 = 6.12$
3. The sum of the lengths = $44.5 + 11.2 = 55.7$ cm
4. $4.78 = 4 + 0.7 + 0.08$

(7) Alexandria (Al Agamy District)

First

1. 4.162
2. 19.085
3. 12,400
4. 45
5. 12.019
6. 0.006
7. 12.8

Second

1. 5 and 7
2. 1,000
3. 0
4. tenths
5. $n \times 3$
6. 47×38

7 $3.5 = w + 2.8$ 8 500

Third

1 0.46 2 2.25 3 5 X (2.1 + 6)
4 3 tenths 5 15.7 6 44
7 90

Fourth

1 k = 7.8 – 2.4 = 5.4
2 The number of toys = 320 X 12 = 3,840 toys
3 GCF = 2 X 2 X 3 = 12
LCM = 2 X 2 X 3 X 3 X 2 = 72
4 The price of each book = 490 ÷ 14 = 35 pounds

(8) Alexandria (West District)

First

1 hundredths 2 45,000 3 7.6
4 8.009 5 2.369 6 3.27
7 4,259

Second

1 36.407 2 1 3 30
4 2 5 75 6 30.4 X 8.2
7 24.5 8 60

Third

1 x + 0.8 – 1.6 2 34 3 10
4 10 5 96 6 multiplication
7 n + 4

Fourth

1 GCF = 2 X 3 = 6
LCM = 2 X 2 X 3 X 3 = 36
2 Ahmed paid = 13.85 X 9 = 124.65 pounds
3 13.5 + 0.25 ÷ 0.1 – (12.8 X 0.1)
= 13.5 + 2.5 - 1.28 = 16 – 1.28 = 14.72
4 The rule : n +1.5
Inputs : 10 , 8.5 Outputs : 13.75

(9) El Behera - (Damanhour District)

First

1 2.53 2 3 3 1
4 hundredths 5 11 6 14
7 =

Second

1 n + 3 2 120 3 10
4 0.7 5 1.11 6 2.142
7 9 hundredths 8 0.7541

Third

1 1.53 2 31 3 1
4 0 5 8.6 – 7.4 6 35
7 0.3

Fourth

1 a) 4,864 ÷ 32 = 152 b) 321 X 15 = 4,815
2 5.5 ÷ 5 X 10 – 10 = 1.1 X 10 – 10 = 11 – 10 = 1
3 GCF = 5
LCM = 2 X 2 X 5 X 7 = 140
4 The sum = 17.25 + 8.5 = 25.75 pounds

(10) Qalyubiyya - (Banha District)

First

1 20.078 2 0.08 3 0.004
4 2 + n 5 5,600 6 0.1
7 =

Second

1 6.345 2 0.0536 3 30
4 7 5 10 + 7 + 0.7 6 7.85
7 35.47 8 42.12

Third

1 1 2 200.005 3 0.15
4 444 X 17 5 6 6 6.5
7 Tenths

Fourth

1. The total cost = 5 X 3.81 = 19.05 pounds
2. (45.2 – 14) ÷ 0.1 + 32.2
   = 31.2 ÷ 0.1 + 32.2 = 312 + 32.2 = 344.2
3. The length of each piece = 8.7 ÷ 3 = 2.9 meters
4. 75 X 32 = (70 X 30) + (70 X 2) + (5 X 30) + (5 X 2) = 2,100 + 140 + 150 + 10 = 2,400

(11) Damietta - (Ras El Bar District)

First

1. 5,431.8
2. 1
3. $<$
4. 250.25
5. 3 and 5
6. 5,000
7. 10

Second

1. 35
2. 3.2 X 2.2
3. 20
4. 1,000
5. 2
6. 0
7. 12
8. 3.025

Third

1. 1.3
2. 3
3. 5
4. 0.24
5. 11.2
6. 2.2
7. 2

Fourth

1. The number of bags = 120 ÷ 12 = 10 pens
2. GCF = 2 X 2 = 4
   LCM = 2 X 2 X 3 X 2 = 24
3. 3.3 ÷ 3 X 10 – 10 = 1.1 X 10 – 10 = 11 – 10 = 1
4. The remainder = 78.4 – 52.74 = 25.66 L.E

(12) Assiut - (Assiut District)

First

1. 0.005
2. 5
3. =
4. x + 2.5 = 7
5. 101
6. 3
7. 0.7

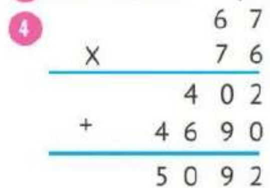
Second

1. 2.3 + 5.4 = 7.7
2. 2
3. 8
4. 1
5. 26
6. 45
7. 30
8. 7.46

Third

1. 24
2. 0.01
3. 6,726
4. (4.62 – 3.1) X 2
5. $<$
6. 6.15
7. n + 2

Fourth

1. The weight of all fish = 53.25 + 46.7 = 99.95 kg
2. GCF = 2 , LCM = 2 X 2 X 3 X 5 = 60
3. The distance = 1,050 ÷ 75 = 14 meters
4. 

(13) El Gharbia - (East District)

First

1. 0.004
2. x + 2.7 – 3.8
3. 13
4. 1
5. 9.8
6. 30.045
7. 0.714

Second

1. 18
2. 60
3. 2,500
4. 5
5. 0.12
6. 6.177
7. Dividend
8. 64.064

Third

1. 8
2. $>$
3. 35
4. 9
5. 0.253
6. 11.3
7. 6

Fourth

1. 12 + (9 – 2) X 5 = 12 + 7 X 5 = 12 + 35 = 47
2. 4 = 2 X 2
   6 = 2 X 3
   LCM = 2 X 2 X 3 = 12

3. They saved = 17.25 + 8.5 = 25.75 pounds
4. 1,447 ÷ 12 = 123 R 1

(14) Kafr El Shiekh - (East District)

First

1. 0.36   2. 0.02   3. 3
4. 36   5. n X 8   6. 2.726
7. 101

Second

1. 7.01   2. 315 R 2   3. 10
4. 56.3   5. (20 X 7) + (4 X 30)
6. 30   7. 1   8. 6.512

Third

1. 9 – x = 3.5   2. 0.42   3. 0.026
4. 0.025   5. 116   6. 1.55
7. 0.7

Fourth

1. LCM = 2 X 5 X 2 X 3 = 60
2.

	100	30	7
40	4,000	1,200	280
5	500	150	35

45 X 137 = 4,000 + 1,200 +
280 + 500 + 150 + 35 = 6,165

3. The weight of all fish = 53.25 + 46.8 = 100.05 kg
4. 3,872 ÷ 11 = 352

```
      3 5 2
 11 ) 3 8 7 2
    – 3 3
      ---
        5 7
    –   5 5
        ---
          2 2
    –     2 2
          ---
          0 0
```

(15) Dakahlia - (East District)

First

1. 3.4   2. 18   3. 79.43
4. 5.6   5. 830   6. 11
7. 600

Second

1. 9   2. 0.51   3. 1.82
4. 20   5. 62.15   6. 19
7. 0.009   8. 8

Third

1. 0   2. n + 2   3. tenths
4. 9   5. 6,700   6. <
7. 50.407

Fourth

1. D = 6.6 – 5.3 = 1.3
2. The sum of money = 17.25 + 8.5 = 25.75 pounds
3. 2.5 X 2.3 = 5.75
4. Each class gets = 240 ÷ 6 = 40 prizes

(16) Qena - (Nagaa Hamady District)

First

1. hundredths   2. 6   3. 33.3
4. 1   5. 5   6. 30
7. 0

Second

1. 3   2. 80   3. 0.51
4. 101   5. 37.5   6. 4
7. 18   8. 91.36

Third

1. 30.51   2. 100   3. 2.01
4. 6   5. 20,000   6. 6
7. <

Fourth

1. The order : 0.58 , 8.005 , 8.05 , 8.5
2. 32 X 12 = 384
3. GCF = 5
   LCM = 2 X 5 X 3 = 30
4. The flour that Mona had = 3.75 + 2.25 = 6 kg

(17) Marsa Matruh - (Al Alamein)

First

1. 320.804
2. 179.32
3. 0.8
4. 8
5. 39.02
6. 0.002
7. 2.7

Second

1. 3 and 5
2. p + 7.5 = 10.1
3. 100
4. multiple
5. tenth
6. 10
7. 900
8. 39 X 28

Third

1. 0.48
2. 65
3. (13.5 + 2.5) ÷ 4
4. 20 thousandths
5. 24
6. 1
7. 24

Fourth

1. k = 7.5 – 5.5 = 2
2. Alaa saved = 15 X 225 = 3,375
3. GCF = 2 X 7 = 14
   LCM = 2 X 2 X 7 X 3 = 84
4. The distance = 288 ÷ 12 = 24 km

